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N°10/September 2026

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Fragmented Stability: Recalls and Fixed-Term Contracts in a Dual Labour Market [1]

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September 8, 2026

[1]We are grateful to Hélène Benghalem, Clémence Berson, Antoine Bertheau, Sylvie Blasco, Pierre Cahuc, François Fontaine, Fabian Gouret, Cyrille Hagneré, Jérémy Hervelin, Pedro Martins, Marco Palladino, Véronique Simonnet, Anthony Terriau, Hélène Turon, and seminar participants at the French Ministry of Labour (DARES), UNEDIC, Le Mans Université, Université Lyon 2, Université Grenoble-Alpes, Université Paris 2, Université Paris 8, participants at the AFSE conference on Public Policy Evaluation and the 2024 ADRES Job Market Conference for insightful discussions and comments. This research is supported by a grant of the French National Research Agency (ANR), Investissements d'Avenir (Labex MME-DII/ANR11-LBX-0023 and Labex Ecodec/ANR-11-LABX-0047).

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Abstract

This paper documents a neglected dimension of labour market dualism: the repeated hiring of the same worker by the same employer through short fixed-term contracts. Using exhaustive French hiring declarations from 2012 to 2019, we show that recalls account for a large share of employment entries and that, unlike the classic temporary-layoff patterns emphasised in the United States, they occur overwhelmingly through fixed-term contracts of very short duration. Many workers are repeatedly rehired by the same employer, often several times within a year, while successive recalled contracts frequently have similar durations and are separated by short interruptions. These patterns reveal employment relationships that persist at the employer–worker dyad level while remaining fragmented at the contractual level, a configuration we term *fragmented stability*. We introduce an empirical measure of this phenomenon based on the timing of recalls and the similarity of successive contracts, and show that it represents a quantitatively important component of fixed-term hiring flows. We also find that many recall sequences appear difficult to reconcile with a strict reading of the intended constraints governing the repeated use of fixed-term contracts. Overall, our results suggest that labour market dualism operates not only through the coexistence of permanent and temporary jobs, but also through the repeated interruption and reactivation of persistent employer–worker relationships.

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

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

1 Introduction

When a worker leaves a firm, spends a short spell out of employment, and then returns to the same employer, should the observed hire be interpreted as the formation of a new match, or as the fragmented continuation of an existing employment relationship? This distinction is central to the recall literature and, more broadly, to the interpretation of labour-market flows. Gross hiring flows combine new employer–worker dyads with the reactivation of previously existing ones, and the recall literature has long emphasised that these two events are not equivalent. Yet the institutional form taken by recalls may differ substantially across labour markets.

This paper studies recalls in a dual labour market. We focus on France, where open-ended contracts coexist with widespread use of fixed-term contracts, many of them of very short duration. Similar questions arise in other segmented labour markets, including Italy, Portugal, and Spain. In these settings, repeated hiring by the same employer need not resemble the temporary-layoff patterns typically emphasised in the United States (Feldstein 1975, Fujita & Moscarini 2017, Hall & Kudlyak 2022). Rather than reflecting the resumption of an interrupted permanent job, it may reveal a persistent employer–worker relationship organised through a succession of short contracts (Cahuc et al. 2012, Malherbet & Martins 2024). The relevant question is therefore whether contractual turnover corresponds to turnover in the underlying match, or instead to the fragmentation of a continuing relationship.

We address this question using administrative hiring declarations covering the French non-farm private sector from 2012 to 2019, excluding temporary work agencies. The analytical sample contains more than 156 million hires involving over 21 million workers, 3.3 million employers, and 58 million employer–worker dyads. Worker and employer identifiers, combined with information on contract type and expected duration, allow us to reconstruct employer–worker histories and characterise repeated matches. This longitudinal dimension is essential because fragmented contractual attachment can only be identified from sequences observed within the same dyad.

We establish several new facts. First, recalls to the worker's most recent employer account for 44.6 percent of all entries into employment. Nearly one hire out of two therefore reactivates a previously observed employer–worker dyad. Second, recalls are not merely associated with fixed-term employment: they occur almost exclusively through fixed-term contracts and are heavily concentrated in their shortest-duration segment. Third, the phenomenon is sizeable but concentrated at the worker level. Each year, between 1.2 and 1.5 million workers are recalled, representing 22 to 24 percent of workers hired at least once, while more than one quarter of recalled workers experience at least five recalls with the same employer within the year. The aggregate importance of recalls thus reflects both

their incidence and their recurrence among a subset of workers. Recall sequences also tend to preserve the contractual structure of the preceding spell. Successive fixed-term contracts within the same dyad frequently have identical or very similar durations. These patterns point to the repeated interruption and reactivation of the same employer–worker relationship rather than to a succession of unrelated hiring events.

Taken together, these findings identify a form of employer–worker attachment that is persistent at the dyad level but discontinuous at the contractual level. We refer to this configuration as *fragmented stability*. The term is descriptive rather than legal: it does not imply that production continues between contracts, that the worker remains formally attached to the employer during the interruption, or that successive contracts constitute a single employment relationship in law. It describes sequences in which the same employer repeatedly hires the same worker through short and similar fixed-term contracts separated by short gaps.

To operationalise this concept, we introduce a metric that classifies a transition as fragmented stability when it combines a recall, a short interruption, and a limited change in duration across two successive fixed-term spells. Rather than imposing a single threshold, we report the measure over a grid of interruption and duration-difference criteria. Depending on the threshold pair, between 32.9 and 71.4 percent of recall transitions between fixed-term contracts with observed durations satisfy the definition. This metric turns a qualitative pattern into a transparent empirical object that can be compared across institutional settings and used as a target moment in future models of repeated hiring.

The paper contributes to two strands of literature that have largely developed separately. The first is the literature on recalls and temporary layoffs, which distinguishes returns to previous employers from genuinely new job finding and emphasises their importance for job search and labour-market flows.[1] The second is the literature on dual labour markets, which highlights the role of temporary contracts in generating labour turnover and labour-market segmentation.[2] Our contribution is to connect these perspectives. In a dual labour market such as France, recalls are not primarily a temporary-layoff phenomenon; they are closely tied to short fixed-term contracts and constitute an important margin of contractual fragmentation.

The contribution is both empirical and conceptual. Empirically, the paper documents the scale,

[1] Among the many contributions to the literature on recalls and temporary layoffs, those most closely related to the present paper include Feldstein (1975, 1976), Haltiwanger (1984), Katz (1986), Katz & Meyer (1990), Anderson (1992), Corak (1996), Jansson (2002), Røed & Nordberg (2003), Nekoei & Weber (2015, 2020), Fujita & Moscarini (2017), Hall & Kudlyak (2022), Castro et al. (2024), Lam & Qiu (2024), and Gertler et al. (2026).

[2] Without doing justice to a large and diverse literature, particularly relevant contributions for the present paper include Blanchard & Landier (2002), Cahuc & Postel-Vinay (2002), Alba-Ramírez et al. (2007), Boeri & Garibaldi (2007), Kahn (2010), Berton & Garibaldi (2012), Centeno & Novo (2012), Cappellari et al. (2012), Arranz & García-Serrano (2014), Cahuc et al. (2016), Bentolila et al. (2020), Cahuc et al. (2020), and Boeri & Garibaldi (2024).

contractual form, recurrence, and timing of recalls using comprehensive employer–worker histories. Conceptually, it shifts attention from the individual contract to the underlying dyad and introduces a metric of fragmented stability. This distinction changes how hiring flows should be interpreted, adds a within-dyad dimension to labour-market dualism, and raises an institutional question about how constraints on repeated fixed-term hiring operate in practice. More broadly, the paper identifies a quantitatively important margin of labour-market adjustment that future firm-level, theoretical, and structural analyses should account for.

The remainder of the paper proceeds as follows. Section 2 presents the institutional background, the data, and the definition of recalls. Section 3 documents the main contract-level facts. Section 4 turns to the worker-level dimension of repeated recalls. Section 5 examines the extent to which recall sequences resemble the fragmented continuation of the same employment relationship and discusses their relationship with the regulation of fixed-term contracts.

2 Institutional background, data, and definition of recalls

This section presents the institutional and empirical background for the analysis. It briefly describes the French contractual setting, the data used in the paper, and the definition of recalls adopted throughout the empirical analysis. For brevity, the main text focuses on the elements needed to understand the empirical analysis. Additional details on the legal framework are reported in Appendix A, while further information on the data and sample construction is provided in Appendices B and C.

2.1 Institutional background

The French labour market is characterised by a marked divide between open-ended contracts and fixed-term contracts, as in several other European countries. Open-ended contracts remain the default legal form of employment, whereas the use of fixed-term contracts is formally restricted by rules concerning admissible motives, contract duration, renewal, and, in many cases, waiting periods between successive contracts. These restrictions are intended to limit the repeated use of temporary contracts for labour needs that are in practice permanent or recurrent. Additional details on the legal framework are provided in Appendix A.

In spite of this formal framework, fixed-term contracts are widely used in France and are often of very short duration. Although fixed-term contracts account for only a limited share of the employment stock in the private sector, they represent the majority of entries into employment, and short-duration contracts account for a large share of these entries. This feature has been documented extensively in previous work and makes France a particularly relevant setting in which to study repeated hiring by

the same employer.[3] In a labour market structured by contractual dualism, recalls may not simply correspond to the temporary-layoff patterns commonly studied in the United States. They may instead reveal one of the ways in which labour market segmentation operates in practice: employer–worker relationships persist, but often through repeated short fixed-term contracts rather than through continuous contractual attachment.

This institutional setting motivates the empirical analysis that follows. If repeated employer–worker matches are concentrated in short fixed-term contracts, contractual turnover may overstate the effective discontinuity of employment relationships. The purpose of the analysis is therefore not only to document recalls as contributing to labour market flows, but also to examine whether they constitute a specific form of fragmented continuity within a dual labour market.

2.2 Data and sample

The analysis is based on the *Déclarations Préalables à l'Embauche* (DPAE), administrative hiring declarations collected by the French social security administration (Urssaf). We use the universe of declarations covering private-sector employment in France during the period 2012–2019. These declarations record the start of employment relationships and contain information on worker identity, employer identity, contract type, and, for fixed-term contracts, expected contract duration. Their exhaustive nature makes it possible to distinguish new hires from hires involving a return to a previous employer.

The main analysis is conducted on a harmonised sample of hiring declarations for which worker-employer histories can be reconstructed consistently over time.[4] To keep the text concise, details on sample construction, exclusions, and variable definitions are provided in Appendix C. Note simply that the analytical sample excludes suspected duplicate declarations and focuses on sectors for which the declarations are exhaustive, thereby excluding temporary work and agriculture. The summary statistics for the analytical sample are reported in Table 1.

Table 1: Data and sample

Data structure		*Sample size*	
Observation unit	Hire	Total hires	156,035,171
Sample period	2012–2019	Total workers	21,404,313
Coverage	Private sector	Women	10,284,060
		Men	11,120,253
		Total employers	3,363,916
		Total dyads	58,027,230

Notes: The analytical sample covers private-sector hires in France over the period 2012–2019, excluding temporary work agencies and agriculture. Authors' calculations based on the *Déclarations Préalables à l'Embauche* (DPAE).

[3] See, for example, Le Barbanchon & Malherbet (2013), Cahuc et al. (2016), Fontaine & Malherbet (2016), Cahuc et al. (2020) or Rémy & Simonnet (2021).

[4] While the data are exceptionally rich for tracking contract flows, they contain only limited information on workers beyond age and gender. Unfortunately, anonymised identifiers do not allow us to link individuals to other administrative sources, which constrains the analysis of worker heterogeneity.

The scale of the data is substantial: the sample includes more than 156 million hires, over 21 million workers, more than 3.3 million employers, and about 58 million employer–worker dyads over the period 2012–2019. This breadth is especially valuable in the present context, since identifying recalls requires reconstructing repeated employer–worker histories over a very large number of hiring flows and relationships.

For the purpose of this paper, the key advantage of the DPAE is that they provide an exhaustive measure of hiring flows together with worker and employer identifiers. This makes it possible to reconstruct repeated employer–worker matches over time and to characterise the contractual forms under which such repeated matches occur. The data are therefore well suited to the study of recalls in a setting where temporary employment is pervasive.

2.3 Definition of a recall

Using worker and employer identifiers, each hire can be classified either as a recall to the last employer or as a non-recall hire under our main definition. We define a recall as a hire in which a worker returns to a previous employer. Consistently with most of the literature, the analysis focuses on recalls involving the last employer. More precisely, a recall corresponds to a contract concluded between an employer and a worker after a previous spell in the same employer–worker dyad, provided that the worker has not been hired by another employer in the interval.[5]

Formally, let R_{ijh} denote an indicator equal to one if hire h of worker i by employer j is a recall, and zero otherwise:

$$R_{ijh} = \begin{cases} 1 & \text{if hire } h \text{ corresponds to a return of worker } i \text{ to employer } j, \\ 0 & \text{otherwise.} \end{cases}$$

This is the main empirical object used throughout the paper. The analysis below studies how the distribution of R_{ijh} varies across contract types, contract durations, and workers. The paper also examines recalls at the level of repeated employer–worker sequences.

This definition is empirical rather than legal, but it provides a consistent way to identify repeated employer–worker matches in the data. Legally, recalls and renewals are distinct: a recall occurs after a separation, whereas a renewal extends an existing fixed-term contract. Economically, however, this distinction may be blurred when the interruption is short and the worker returns to the same employer under similar contractual conditions. In such cases, what is recorded as a new hire may in practice capture the fragmented continuation of an existing employment relationship.[6] The purpose

[5] See, for example, Katz & Meyer (1990), Alba-Ramírez et al. (2007), Arranz & García-Serrano (2014), Nekoei & Weber (2015), Fujita & Moscarini (2017) and Gertler et al. (2026) for a similar approach. We examine alternative, broader definitions of recall in Appendix C.6.

[6] See Appendix B for further details.

of the paper is not to resolve this distinction mechanically ex ante, but to measure how far repeated employer–worker matches contribute to contractual fragmentation in a dual labour market.

Section 5 returns to this issue and examines more directly the extent to which repeated recalls should be interpreted as genuinely new hires or as continuation-like sequences within ongoing employer–worker relationships.

3 Recalls and contract fragmentation: main facts

This section documents the main empirical patterns of recalls at the establishment–worker level. We first quantify their prevalence among entries into employment, before showing that they are overwhelmingly concentrated in fixed-term contracts, especially contracts of very short duration. We then examine recall sequences and show that repeated spells within the same establishment–worker pair tend to reproduce similar contractual structures. Taken together, these results suggest that recalls are not isolated hiring events, but part of structured patterns of repeated employer–worker attachment that contribute to contractual fragmentation.

3.1 How common are recalls?

We begin by quantifying the prevalence of recalls among entries into employment. A recall is defined as a hire in which a worker returns to a previous employer. This distinction matters because an observed hire may reactivate a previously observed employer–worker dyad rather than initiate a relationship with a different employer.

Based on the recall indicator R_{ijh} introduced in Section 2.3, the annual recall rate is defined as

$$p_t = \frac{\sum_{h \in \mathcal{H}_t} R_{ijh}}{\sum_{h \in \mathcal{H}_t} 1}$$

where $\mathcal{H}_t$ denotes the set of hires observed in year t. Table 2 reports the recall rate p_t over the period 2012–2019.

Table 2: 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	20,024,909	20,880,806	21,327,094	21,766,247	19,506,646

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 recalls with the last employer. Own calculations based on the 'Déclaration Préalables à l'Embauche (DPAE)'.

Recalls account for a large fraction of hires throughout the period, representing 44.6% of entries on average and more than 44% of entries into employment in 2019. In other words, nearly one out of two observed hires corresponds to a worker returning to a previous employer.

This magnitude shows that recalls are not a marginal adjustment margin, but a central component of employment flows. It also has a direct implication for the interpretation of hiring dynamics. Therefore, gross hiring flows overstate the extent of new employer–worker matching, although non-recall hires can include returns to employers other than the worker's last employer. Part of observed labour turnover instead reflects contractual interruptions within continuing employer–worker relationships, rather than complete match destruction and reallocation.

At the same time, this aggregate recall share does not indicate whether recalls are evenly distributed across contract types or workers. The next subsection shows that recalls are overwhelmingly concentrated in fixed-term contracts, while Section 4 turns to their distribution across workers.

3.2 Recalls are overwhelmingly fixed-term

The aggregate recall rate documented above masks a strong asymmetry by contract type. In particular, recalls are overwhelmingly concentrated in fixed-term contracts, whereas recalls into open-ended contracts are rare. To formalise this point, let R_{ct} denote the number of recalls observed in year t under contract type $c \in \{\text{OEC}, \text{FTC}, \text{Unknown}\}$. Total recalls in year t can then be written as $R_t = \sum_c R_{ct}$ and the share of recalls accounted for by contract type c is given by

$$s_{ct} = \frac{R_{ct}}{R_t}.$$

Table 3 reports the share of recalls by contract type, s_{ct}, over the period 2012–2019.

Table 3: 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	9,631,054	8,706,157

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

On average, 97% of recalls are on fixed-term contracts, compared to less than 0.3% on open-ended contracts. The remaining cases correspond to contracts for which the type is not recorded, and the decline of that category over time suggests an improved reporting quality. By 2019, more than 99% of recalls are on fixed-term contracts.

This result is reinforced when considering contract-specific recall rates. To address this point, we compute the contract-specific recall rate, defined as

$$p_{ct} = \frac{\sum_{h \in \mathcal{H}_t} R_{ijh} \mathbf{1}\{c_{ijh} = c\}}{\sum_{h \in \mathcal{H}_t} \mathbf{1}\{c_{ijh} = c\}},$$

that is, the share of hires under contract type $c \in \{\text{OEC}, \text{FTC}\}$ in year t that correspond to recalls. Table 4 reports the empirical counterpart of p_{ct} over the period 2012–2019.

Table 4: Share of hires that are recalls, by contract type

	2012	2013	2014	2015	2016	2017	2018	2019	Average
OECs	0.84	0.88	0.83	0.84	0.83	0.79	0.78	0.80	0.82
FTCs	49.51	51.11	52.35	53.05	52.86	52.80	52.87	53.12	52.21

Notes: Share of hires that correspond to recalls by contract type between 2012 and 2019 in the non-farm private sector. For each contract type, shares are computed as the number of recalls divided by the total number of hires under that contract type. Hence, for a given year, the table indicates the probability that a hire on an OEC or FTC is a recall. Own calculations based on the 'Déclaration Préalables à l'Embauche (DPAE)'.

This second statistic complements the composition result reported above. Beyond showing that recalls are mostly observed in fixed-term contracts, Table 4 indicates that they are also far more common within this contract type: on average over 2012–2019, 52.2% of FTC hires are recalls, compared with only 0.82% of OEC hires. Recalls in France are therefore tightly linked to the temporary-contract margin, both in composition and in incidence.

Taken together, Tables 3 and 4 show that recalls in France are overwhelmingly an FTC phenomenon: they account for almost none of OEC hires but more than half of FTC hires. Their prevalence should therefore be interpreted as a feature of contractual dualism rather than as a general temporary-layoff margin. The next subsection shows that recalled FTCs are also predominantly very short.

3.3 Fixed-term contracts following a recall are usually very short

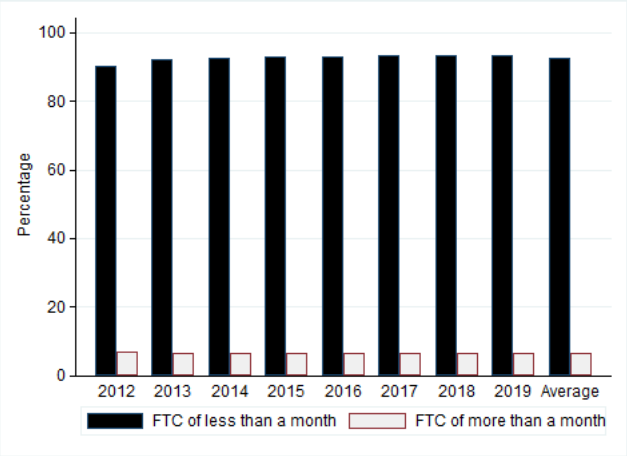
The previous subsection showed that recalls are overwhelmingly concentrated in fixed-term contracts. A third fact is that these recalled fixed-term contracts are predominantly of very short duration. This indicates that recalls are not simply associated with temporary employment in general, but more specifically with a particularly unstable segment of the labour market, characterised by repeated short-duration contracts.

Let D_{ijh} denote the duration of hire h for worker i with employer j, measured in calendar days when the end date of the contract is observed. For a given duration class b,[7] let us define

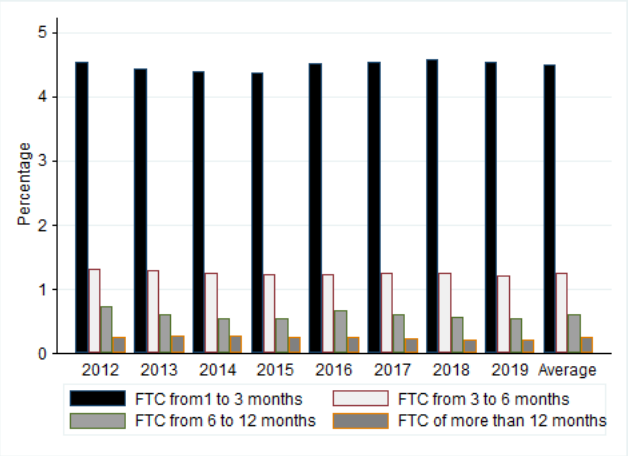
$$s_{bt} = \frac{\sum_{h \in \mathcal{H}_t} R_{ijh} \mathbf{1}\{c_{ijh} = \text{FTC}\} \mathbf{1}\{D_{ijh} \in b\}}{\sum_{h \in \mathcal{H}_t} R_{ijh} \mathbf{1}\{c_{ijh} = \text{FTC}\}},$$

that is, the share of recalled FTC hires in year t whose duration falls in class b. Figure 1 reports the distribution of D_{ijh} for recalled fixed-term contracts.

[7] For example, b may denote contracts lasting less than one month, one to three months, or more than three months, depending on the partition used in the table or figure under consideration.



(a) More or less than one month



(b) Duration of contracts of more than one month

Figure 1: Duration of FTCs upon recall

Notes: Share of entries into recalled employment on FTCs by duration of contracts between 2012 and 2019 in the non-farm private sector. Panel (a) contrasts entries into recalled employment for contracts of less than one month and those of more than one month. Panel (b) contrasts entries into recalled employment by duration for contracts of more than one month. Shares are computed as a percentage of all entries into FTCs upon recall (with or without a recorded end date). Hence in 2019, entries into recalled employment on FTCs lasting less than a month account for 93% of all entries in FTCs upon recall. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

The main pattern is clear: in 2019, contracts shorter than one month represented about 93 percent of recalled FTCs. Recalls are therefore concentrated in the shortest segment of temporary employment. Because short duration alone does not establish continuity of the underlying relationship, Section 5 combines this evidence with the timing and recurrence of returns.

Figure 2 complements this evidence by considering the duration of the contract that precedes the recall. The analysis remains confined to FTCs, with an additional restriction: contracts without a specified termination date in the data are excluded from consideration. Let D_{ijs} denote the duration of the FTC spell s in dyad (i, j), and let $r_{ij,s+1}$ be an indicator equal to one if the next spell in the same dyad is a recall. For a given duration class b measured in weeks, Figure 2 reports

$$p_{bt} = \frac{\sum_{h \in \mathcal{H}_t} \mathbf{1}\{D_{ijs} \in b\}\, r_{ij,s+1}}{\sum_{h \in \mathcal{H}_t} \mathbf{1}\{D_{ijs} \in b\}},$$

that is, the share of FTCs of duration class b that are followed by a recall. The figure can therefore be interpreted as describing the relationship between recall and the duration of the previous contract.

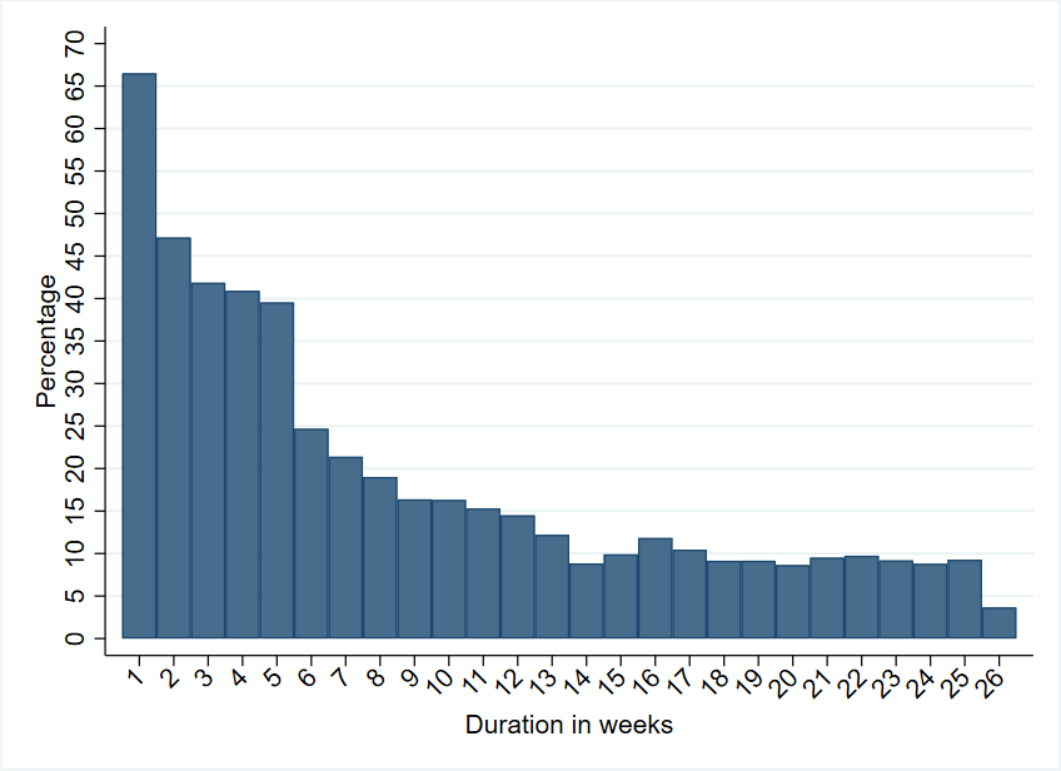


Figure 2: Probability of being recalled after an FTC, by duration (in weeks)

Notes: Average share of FTCs of a given duration in weeks followed by a recall between 2012 and 2019 in the non-farm private sector. Durations range from 1 to 25 weeks. The bin labelled 26 includes FTCs lasting more than 26 weeks. On average over 2012–2019, 66.5 percent of FTCs lasting less than one week are followed by a recall. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

Figure 2 shows a clear negative relationship between the duration of the initial FTC and the probability of being recalled: the shorter the initial contract, the higher the likelihood that the worker returns to the same employer. Short-duration contracts are therefore not only the most frequent contractual form upon recall, they are also the contracts more likely to be followed by a recall.

To assess whether this descriptive pattern also appears in a simple multivariate framework, Table 5 reports estimates from a linear probability model in which the dependent variable equals one for a recall and zero otherwise. Under our baseline definition, the latter observations are classified as new hires.[8] The baseline specification is

$$R_{ijh} = \alpha + \beta_1 \mathbf{1}\{D_{ijh} \leq 30\} + \beta_2 \mathbf{1}\{D_{i,h-1} \leq 30\} + \lambda_t + \delta_s + \varepsilon_{ijh}, \tag{1}$$

where $\mathbf{1}\{D_{ijh} \leq 30\}$ is an indicator equal to one if the current FTC lasts less than one month, and $\mathbf{1}\{D_{i,h-1} \leq 30\}$ is an indicator equal to one if the previous FTC for individual i lasted less than one month. Depending on the specification, λ_t and δ_s denote year and sector fixed effects, respectively.

[8]We use a linear probability model as our main descriptive specification because its coefficients are directly interpretable in percentage points and fixed effects can be incorporated transparently in a setting with very large samples. Additional specifications reported in Appendix D.1 yield the same qualitative conclusions.

The coefficients β_1 and β_2 therefore measure how much more likely a hire is to be a recall when the current or previous FTC is shorter than one month.

Table 5: Linear probability model of recall status

	(1)	(2)	(3)	(4)
Current FTC $\leq$ 1 month	0.138***	0.138***	0.144***	0.144***
	(0.0002)	(0.0002)	(0.0003)	(0.0003)
Previous FTC $\leq$ 1 month	0.554***	0.554***	0.554***	0.555***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Constant	0.041***	0.041***	0.037***	0.036***
	(0.0003)	(0.0003)	(0.0004)	(0.0003)
Year fixed effects	No	Yes	No	Yes
Sector fixed effects	No	No	Yes	Yes
Observations	156,035,171	156,035,171	156,035,171	156,035,171
Adjusted R^2	0.407	0.408	0.431	0.432

Notes: Estimates of a linear probability model on the entire sample of hires. The dependent variable is equal to 1 if the hire is a recall and 0 if it is a non-recall hire. Standard errors are clustered at the employer–worker dyad level. Significance levels: *p<0.1, **p<0.05, ***p<0.01. Own calculations based on the 'Déclaration Préalables à l'Embauche (DPAE)'.

The results confirm the descriptive evidence. Recalls are significantly more likely when the current fixed-term contract is shorter than one month, and even more likely when the preceding fixed-term contract was shorter than one month. In the most demanding specification, which includes both year and sector fixed effects, a current FTC of less than one month is associated with a 14.4 percentage point higher probability of recall, while a previous FTC of less than one month is associated with a 55.5 percentage point higher probability. These large and remarkably stable coefficients suggest that recalls are strongly tied to sequences of very short fixed-term contracts. The purpose of this specification is not to identify a causal mechanism, but to show that the association between short contract duration and recall is not driven solely by time variation or sectoral composition.

3.4 Recall sequences often preserve contract duration

The evidence above shows that recalls are overwhelmingly concentrated in short fixed-term contracts. A final result reinforces this interpretation. When a worker is recalled by the same employer, the recalled contract often has a duration similar to that of the preceding contract. In other words, recall sequences do not simply involve repeated returns to the same employer; they also tend to reproduce the same contractual format.

To formalise this point, let

$$\Delta D_{ijh} = D_{ijh} - D_{ij,h-1},$$

where D_{ijh} denotes the duration of hire h for worker i with employer j, and $D_{ij,h-1}$ the duration of the previous contract in the same employer–worker dyad. Figure 3 reports the cumulative distribution of ΔD_{ijh}, that is, the difference in duration (in days) between two consecutive contracts with the same employer.

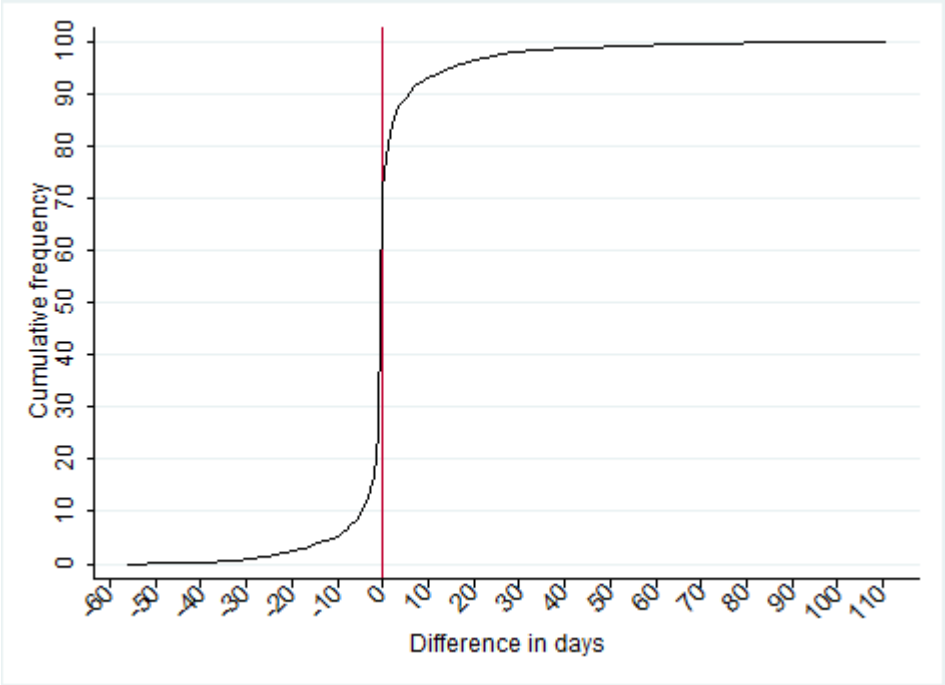


Figure 3: Difference in duration (in days) between two FTCs with the same employer

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 previous FTC with the same employer from the duration of the FTC upon recall. 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 à l'Embauche (DPAE)'.

The pattern is striking. We observe very little variation in the duration of two consecutive contracts with the same employer. The difference in duration between two consecutive contracts is very small on average, with a mean close to one day and a median equal to zero. In other words, many recalled contracts have exactly the same duration as the contract that preceded them. This suggests that recalls often replicate an existing pattern of contractual use rather than introducing a materially different employment arrangement.

This result is informative because fixed-term contracts are often interpreted as a screening device. Under that view, firms initially hire workers on short temporary contracts in order to learn about match quality, with the expectation that contract duration should increase once uncertainty is resolved and the worker is rehired. If that mechanism were dominant, one might expect ΔD_{ijh} to be positive on average. The fact that recalled contracts often remain of similar duration is not fully con-

sistent with that interpretation.

More broadly, the evidence in this section shows that recalls are a quantitatively important component of hiring flows in France, but one that operates almost entirely through short fixed-term contracts. Recalls are concentrated in very short FTCs, are more likely after short preceding contracts, and often reproduce the duration of the previous spell. This pattern suggests that repeated hiring by the same employer frequently reflects the fragmented continuation of an existing relationship rather than a hire involving a different employer. In that sense, recalls are best understood as a form of *fragmented stability*, in which employer–worker matches persist through repeated short contractual spells. The next section turns to the worker level and examines how concentrated this pattern is across individuals.

4 Repeated recalls and worker exposure

This section turns from contracts to workers. It examines how broadly recalls are distributed across individuals, how frequently they are repeated within the year, and whether some demographic groups are more exposed than others. The results show that recalls are concentrated among a subset of workers and that repeated recalls are not evenly distributed across the workforce.

4.1 How many workers are affected by recalls?

The contract-level results in Section 3 establish that recalls account for a large share of entries into employment. That perspective is informative, but it does not indicate how broadly recalls are distributed across workers. A high recall share could reflect a phenomenon affecting a large fraction of workers, or instead repeated rehiring of a smaller group of individuals. Therefore, a worker-level perspective is needed to assess the economic importance of recalls more directly.

Let Y_{it} denote an indicator equal to one if worker i experiences at least one recall in year t, and zero otherwise. The main object of interest in this subsection is the worker-level recall rate, defined as

$$q_t = \frac{\sum_{i \in t} Y_{it}}{\sum_{i \in t} 1},$$

where the sum is taken over workers hired at least once in year t. This quantity therefore measures the share of hired workers who are recalled at least once during the year. Table 6 reports the empirical counterpart of q_t over the period 2012–2019.

Table 6: 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	6,202,905

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)'.

Table 6 shows that recalls involve a substantial number of individuals each year. Over the period, roughly 1.2 to 1.5 million workers are recalled annually, representing about 22% to 24% of workers hired at least once during the year. Recalls are therefore important not only at the contract level, but also for a sizeable segment of the workforce.

The worker-level recall rate nevertheless remains well below the contract-level recall share reported in Section 3. While recalls account for around 44% of hires, only about one quarter of workers are recalled at least once during the year. This gap indicates that recall flows are concentrated among workers who are repeatedly rehired, rather than evenly distributed across all workers entering employment. Their importance in aggregate hiring flows therefore reflects both their incidence and their recurrence. This concentrated pattern is central to the interpretation of fragmented stability: a substantial number of workers are affected, but repeated recalls are disproportionately generated by a subset of individuals who return to the same employer multiple times.

4.2 Recalls are often repeated within the year

We now examine the recurrence underlying this worker-level concentration: conditional on being recalled at least once, how frequently do workers return to the same employer within the year?[9]

To formalise this recurrence, let N_{it} denote the maximum number of recalls experienced with the same employer by worker i in year t. The worker-level recall indicator introduced in the previous section can then be written as $Y_{it} = \mathbf{1}\{N_{it} \geq 1\}$. The object of interest in this subsection is, therefore, the distribution of N_{it} conditional on $N_{it} \geq 1$, that is, among workers who are recalled at least once during the year.

The answer is important for interpretation. A single recall may reflect a temporary interruption in an otherwise standard employment trajectory. By contrast, repeated recalls within the same year point to a more structured pattern of labour market attachment. Table 7 reports the distribution of recalled workers by the maximum number of recalls experienced within the year with the same employer.

[9] As a robustness check, we also compute the incidence of recalls within a given year without restricting attention to cases in which the recalling employer is the same as the previous employer. The results are nearly identical, indicating that recalls overwhelmingly involve a single employer, typically the last one. These results are available upon request.

Table 7: Distribution of recalled workers by the maximum number of 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	16.68
3	9.52	9.71	9.74	9.73	9.74	9.78	9.71	9.69	9.70
4	6.16	6.34	6.43	6.42	6.46	6.42	6.41	6.42	6.38
5 and more	24.78	25.74	26.50	26.82	26.93	26.98	27.04	27.35	26.52
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	1,426,397

Notes: Share of recalled workers who experienced a maximum of 1, 2, 3, 4, 5 or more 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)'.

Table 7 reveals a concentrated distribution of recalls. A sizeable fraction of recalled workers are rehired more than once, and more than one quarter experience at least five recalls during the year. The upper tail of the distribution of N_{it} is therefore substantial. For many workers, recalls are not isolated events, but a recurrent mode of attachment to the same employer.

This recurrence helps reconcile the contract-level and worker-level evidence. Recalls account for a large share of hires while affecting a smaller share of workers because the same individuals are repeatedly rehired through multiple short employment spells. Their importance in aggregate hiring flows is therefore driven not only by their incidence, but also by their recurrence. This pattern also strengthens the interpretation developed in Section 3: repeated recalls within the same year suggest that some employer–worker relationships are maintained through a succession of short contractual spells separated by brief interruptions. This is precisely the type of arrangement captured by the notion of fragmented stability.

4.3 Which workers are most exposed?

The previous subsection showed that recalls are often repeated within the year, implying that the high recall share at the contract level is driven in part by the repeated use of the same workers. We now examine whether this recurrence is evenly distributed across individuals or whether some groups are more exposed than others. The data contain information on age and gender, but not on education, occupation, or qualifications. The analysis in this subsection is therefore limited to these observable demographic characteristics.

Using the worker-level recall indicator introduced above, let Y_{it} denote an indicator equal to one if worker i is recalled at least once in year t, and zero otherwise. For each age-gender group, we compute the share of workers hired at least once during the year who are recalled by a former employer:

$$q_{agt} = \frac{\sum_{i \in t} Y_{it} \, \mathbf{1}\{Age_i = a, \; Gender_i = g\}}{\sum_{i \in t} \mathbf{1}\{Age_i = a, \; Gender_i = g\}},$$

where the sum is taken over workers hired at least once in year t. Figure 4 reports the resulting recall

profiles by age for men and women.

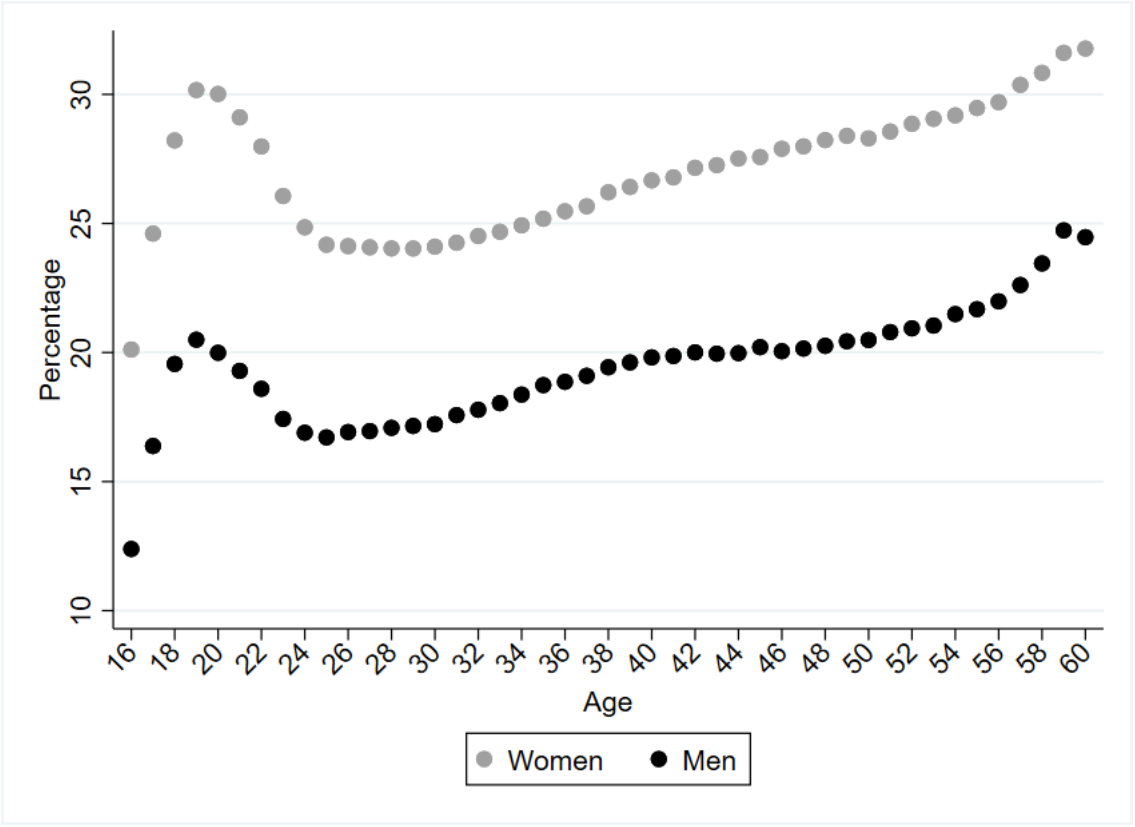


Figure 4: Share of recalled workers by age and gender

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 individuals aged between 16 and 24 may still be enrolled in education, three results emerge from Figure 4. First, the recall rate is consistently higher for women, with a sizeable difference relative to men at all ages. Second, the proportion of recalled workers is greater early in the career, peaking around age 20. Third, it then increases almost monotonically from age 25 until retirement.[10]

Repeated short-duration attachment to the same employer is therefore not evenly distributed across the workforce. Rather, it is concentrated among specific demographic groups, indicating that the fragmentation documented in Sections 3 and 4.2 also has a clear worker-level dimension. To complement this descriptive evidence, Table 8 reports estimates from a linear probability model in which the dependent variable equals one if the worker is recalled at least once during the year and zero otherwise.[11]

[10] Lam & Qiu (2024) document a similar age profile in the United States for workers aged 25 to 55.
[11] As a robustness check, Appendix D.2 reports additional estimates. The qualitative conclusions remain unchanged.

The baseline specification is

$$Y_{it} = \alpha + \beta\, Female_i + \sum_a \gamma_a AgeGroup_{ia} + \lambda_t + \delta_s + \varepsilon_{it}, \tag{2}$$

where $Female_i$ is an indicator equal to one for women, $AgeGroup_{ia}$ denotes age-group indicators, and individuals aged 25–34 form the reference category. Depending on the specification, λ_t and δ_s denote year and sector fixed effects, respectively.[12] The coefficients therefore measure how recall exposure varies across observable demographic groups.

Table 8: Linear probability model with worker recall exposure as dependent variable

	(1)	(2)	(3)	(4)
Women	0.079***	0.079***	0.024***	0.024***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Age 16–24	0.026***	0.026***	0.029***	0.029***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Age 35–44	0.022***	0.022***	0.013***	0.013***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Age 45–54	0.036***	0.037***	0.022***	0.022***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Age 55+	0.083***	0.084***	0.055***	0.056***
	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Constant	0.168***	0.168***	0.184***	0.184***
	(0.0002)	(0.0002)	(0.0001)	(0.0001)
Year fixed effects	No	Yes	No	Yes
Sector fixed effects	No	No	Yes	Yes
Observations	49,550,095	49,550,095	48,139,416	48,139,416
Adjusted R^2	0.011	0.012	0.124	0.124

Notes: Estimates of a linear probability model on the sample of workers hired at least once during the year. The dependent variable is equal to 1 if the worker experiences at least one recall during the year and 0 otherwise. Standard errors are clustered at the employee level. Significance levels: *p<0.1, **p<0.05, ***p<0.01. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

The estimates confirm the descriptive evidence. Women are more exposed to recalls than men, and recall exposure is higher both at the beginning and at the end of working life relative to the reference age group. At the same time, part of these raw differences appears to reflect sectoral composition. This is particularly visible for women, whose estimated gap shrinks substantially once sector fixed effects are introduced.[13] The same pattern is observed across age groups, albeit more moderately. Taken

[12] Because the regression is estimated at the worker-year level while the raw data are observed at the hire level, sector fixed effects require assigning a single sector to each worker-year observation. We do so using the modal sector, that is, the sector in which the worker records the largest number of hires during the year.

[13] For women, the estimated gap declines from 7.9 percentage points in columns (1)–(2) to 2.4 percentage points in columns (3)–(4).

together, the results show that recall exposure is heterogeneous across workers, but also that part of this heterogeneity operates through the sectoral allocation of workers.

These patterns should nevertheless be interpreted with caution. Since the analysis is descriptive and the data do not include richer information on workers' qualifications or job histories, the mechanisms underlying these differences cannot be identified. In particular, the higher exposure of women and older workers to repeated recalls should not be interpreted as direct evidence of discrimination. It does, however, indicate that exposure to repeated recalls, the worker-level pattern underlying fragmented stability, is heterogeneous across workers and may contribute to persistent differences in employment trajectories.

Taken together, the results in Section 4 complement the contract-level evidence from Section 3. They show that recalls affect a substantial number of workers, but are concentrated among a relatively small subset of them. Repeated recalls within the year are common and exposure is higher for women and at both ends of the age distribution. The recall patterns associated with fragmented stability therefore also have a heterogeneous worker-level dimension. The next section turns to the contractual meaning of these repeated recalls and examines the extent to which they resemble fragmented continuation of the same employment relationship.

5 Recalls and the fragmented continuation of employment relationships

This section examines the contractual meaning of repeated recalls. It asks to what extent such sequences should be interpreted as genuinely new hires or, instead, as fragmented continuation of existing employment relationships. Then it considers whether the observed patterns are consistent with the regulatory framework governing fixed-term contracts.

5.1 Recall and renewal: two margins of employment continuation

The previous sections showed that recalls account for a large share of hires, are overwhelmingly concentrated in fixed-term contracts, and are often repeated within the same employer–worker pair. These patterns raise a natural question: to what extent should repeated recalls be interpreted as genuinely new employment relationships, and to what extent do they resemble fragmented continuation of an existing one?

From a legal point of view, a recall is not equivalent to a renewal or continuation of the same contract. Fixed-term contracts are governed by rules concerning duration, renewal, and waiting periods, and the formal classification of a contractual sequence depends on elements that are not fully observed in the administrative data. For that reason, the objective of the paper is neither to reclassify recalls mechanically as renewals nor to determine the legal validity of each observed sequence. Rather,

the aim is to characterise the extent to which repeated employer–worker matches take the empirical form of fragmented continuation.

To formalise this idea, consider a worker i and employer j observed over a sequence of spells $s = 1, \ldots, S_{ij}$. Let D_{ijs} denote the duration of spell s, G_{ijs} the interruption in calendar days between spell s and spell $s+1$, and $r_{ij,s+1}$ an indicator equal to one if spell $s+1$ is a recall. We then define

$$F_{ij} = \sum_{s=1}^{S_{ij}-1} r_{ij,s+1},$$

the number of recalls observed within the dyad, and

$$\bar{G}_{ij} = \frac{1}{F_{ij}} \sum_{s=1}^{S_{ij}-1} r_{ij,s+1} G_{ijs}, \qquad \text{for } F_{ij} > 0,$$

the average interruption length across recalled spells within the dyad.

This sequence-level representation highlights the two margins that matter for the economic interpretation of recalls. First, repeated recalls within the same dyad indicate persistence of the employer–worker match. Second, short interruptions and limited changes in contractual format across spells indicate persistence of the employment relationship despite legal discontinuity. In that sense, fragmented stability can be understood empirically as a situation in which the match continues through repeated recalls, while the contract remains segmented into successive short spells rather than continuous attachment.

This distinction is economically important. When interruptions are long and contractual conditions change substantially across spells, the observed hire is more plausibly interpreted as a genuinely new employment relationship. By contrast, when recalls are repeated, interruptions are short, and contract duration remains stable across spells, the sequence looks much closer to fragmented continuation than to new matching. The evidence presented in Sections 3 and 4 already points in that direction. Recalls are concentrated in very short fixed-term contracts, successive spells often preserve the same contractual format, and repeated recalls are common within the same employer–worker pair. Taken together, these patterns suggest that at least a substantial share of recalls cannot be understood solely as isolated rehiring events.

The remainder of this section examines that interpretation more directly. We first study the interruption margin by analysing the distribution of G_{ijs} across repeated fixed-term sequences and combine it with contract-duration similarity to construct the fragmented-stability metric. We then turn to the regulatory implications of these patterns and examine the extent to which they are difficult to reconcile with a strict reading of the rules governing fixed-term contracts.

5.2 Short interruptions and continuation-like sequences

The distinction between recall and continuation can be examined more directly through the interruption margin. In the sequence-level notation introduced above, the key object is G_{ijs}, the time elapsed between two successive spells in the same dyad. If a worker returns to the same employer after a long interruption, the new hire may plausibly be interpreted as a new employment relationship. However, when the interruption is short, the sequence looks less like a genuinely new hire and more like a fragmented continuation of an existing match.

Building on the previous results, we define a continuation-like sequence, or fragmented-stability sequence, as a transition between two spells in the same dyad that combines three features: a recall, a short interruption, and a stable contractual format across spells. Formally, let

$$\mathcal{FS}_{ij,s+1}(\tau,\kappa) = \mathbf{1}\left\{r_{ij,s+1}=1,\ G_{ijs}\le\tau,\ |D_{ij,s+1}-D_{ijs}|\le\kappa,\ c_{ijs}=c_{ij,s+1}=\text{FTC}\right\},$$

where τ is a threshold for what counts as a short interruption and κ a threshold for what counts as a limited change in contract duration. This indicator is not intended to provide a legal classification of contractual sequences. Rather, it offers a simple empirical way to characterise the type of repeated employer–worker attachment that we refer to as fragmented stability. In the present paper, we do not seek to impose a single threshold choice. Instead, the empirical analysis documents the components of $\mathcal{FS}_{ij,s+1}$ separately and then summarises their joint prevalence for a range of plausible thresholds.

Table 9 first reports the distribution of G_{ijs} for fixed-term contract sequences, both overall and by duration of the preceding fixed-term contract.

Table 9: Time elapsed between two FTCs (in days) with the same employer

	Median	Mean	N
Previous FTC of less than a month	3	20.34	67,501,331
Previous FTC between 1 and 3 months	18	88.14	3,748,936
Previous FTC between 3 and 6 months	62	122.88	1,103,472
Previous FTC of more than 6 months	56	110.60	885,636
Overall	4	26.45	73,239,375

Notes: Average and median time elapsed between two contracts with the same employer, both overall and by duration of the preceding contract. Median and mean elapsed times are calculated as the elapsed time between the end of an 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 Appendix C.3 are applied over the full period 2012 to 2019. Hence, 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 20.34 days. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

The main result is that many recalls occur after short interruptions. Overall, the average elapsed time between two consecutive FTCs with the same employer is less than one month, while the median

is only four days. The interruption margin is even shorter when the preceding contract was itself of short duration: for contracts lasting less than one month, the median gap is three days and the mean is about 20 days. The time elapsed between two successive spells in many dyads G_{ijs} is therefore small, which is precisely one of the empirical features associated with fragmented stability.

To summarise the joint prevalence of short interruptions and stable contractual format, Table 10 reports the share of recall sequences between two FTCs that meet the empirical definition of fragmented stability for alternative threshold pairs (τ, κ). More precisely, each cell can be read as the empirical counterpart of

$$\Theta^{\mathcal{FS}}(\tau,\kappa) = \frac{\sum_{i,j,s} \mathcal{FS}_{ij,s+1}(\tau,\kappa)}{\sum_{i,j,s} r_{ij,s+1}\mathbf{1}\{c_{ijs} = c_{ij,s+1} = \text{FTC}\}},$$

that is, the share of recall transitions between two FTCs that satisfies the empirical definition of fragmented stability for a given threshold pair (τ, κ).

Table 10: Share of recall sequences classified as fragmented stability, by threshold pair

	$\kappa = 0$	$\kappa \leq 3$	$\kappa \leq 7$
$\tau \leq 7$ days	32.92	51.95	57.37
$\tau \leq 14$ days	36.89	58.63	65.07
$\tau \leq 30$ days	39.98	63.97	71.43

Notes: The table reports the empirical counterpart of $\Theta^{\mathcal{FS}}(\tau,\kappa)$, that is, the share of recall transitions between two FTCs that satisfy the empirical definition of fragmented stability for a given threshold pair (τ, κ). A sequence is classified as fragmented stability if it is a recall, the interruption between the two contracts is at most τ calendar days, and the absolute difference in contract duration is at most κ days. The sample is restricted to transitions between two FTCs for which contract duration is observed for both spells. Shares are computed on the sample for which the recall definition and corrections described in Appendix C.3 are applied over the full period 2012 to 2019. Own calculations based on the Déclaration Préalables à l'Embauche (DPAE).

Table 10 shows that a substantial share of recall sequences satisfies the empirical definition of fragmented stability, even under relatively demanding thresholds. When fragmented stability is defined as a return to the same employer within one week and with exactly the same contract duration, 32.9 percent of recall transitions meet the definition. Allowing for small differences in contract duration raises this share considerably: with the same one week interruption threshold, it reaches 52.0 percent when durations may differ by up to three days and 57.4 percent when they may differ by up to one week. With a one-month interruption threshold and a one-week duration-difference threshold, more than 70 percent of recalls are classified as fragmented instability sequences.

These magnitudes are informative because they combine the three features at the core of fragmented stability: return to the same employer, a short interruption between spells, and a highly similar contractual format across successive contracts. The employer–worker match therefore appears

stable at the dyad level, while remaining fragmented at the contractual level through a succession of distinct FTCs. In this sense, $\mathcal{FS}_{ij,s+1}$ should not be viewed as a single arbitrary classification, but rather as a family of empirical measures indexed by (τ, κ), summarising how closely recall sequences resemble continuation-like attachment within the same employer–worker relationship.

The corresponding metric, $\Theta^{\mathcal{FS}}(\tau, \kappa)$, provides a simple and transparent summary of fragmented stability. It also defines an empirical object that can be compared across institutional settings and potentially used as a target moment in models of repeated hiring and labour market dualism. Combined with earlier evidence that recalls are concentrated in short FTCs and that successive recalled contracts often preserve similar durations, Table 10 suggests that short interruptions are part of broader continuation-like sequences rather than isolated rehiring events. This is difficult to reconcile with a view of recalls as predominantly new matching.[14]

A complementary way to summarise the role of fragmented stability is to decompose annual fixed-term hiring flows as

$$\mathcal{H}_t^{FTC} = N_t + R_t^{\mathcal{FS}} + R_t^{-\mathcal{FS}},$$

where $\mathcal{H}_t^{FTC}$ denotes total fixed-term hires, N_t denotes non-recall fixed-term hires, $R_t^{\mathcal{FS}}$ denotes recalls classified as fragmented stability, and $R_t^{-\mathcal{FS}}$ denotes fixed-term recalls that do not meet the fragmented stability criterion.

Figure 5 reports this decomposition for the threshold pairs lying along the diagonal of the threshold grid (τ, κ) detailed in Table 10, ordered from the most to the least restrictive definition of fragmented stability. For each threshold pair, the decomposition is computed separately for each year from 2012 to 2019, and the bars report the unweighted arithmetic mean of the corresponding annual shares.

[14] Additional regression evidence reported in Appendix D.3 reinforces this interpretation. Short preceding FTCs are associated with shorter average interruptions and with a significantly higher probability of very short gaps before recall.

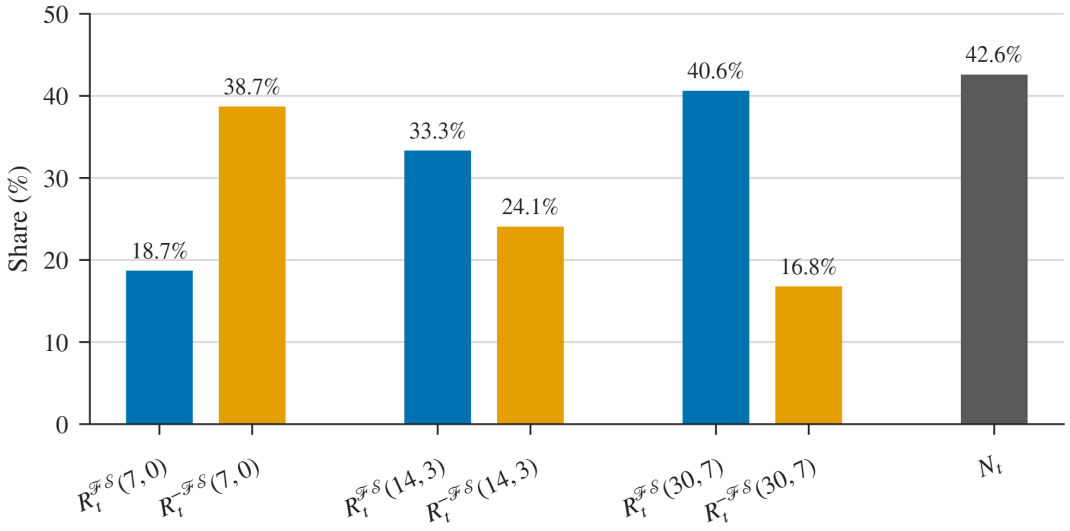


Figure 5: Decomposition of fixed-term hiring flows

Notes: Decomposition of hires on fixed-term contracts into non-recall fixed-term hires, FTC-to-FTC recalls classified as fragmented stability, and FTC-to-FTC recalls not classified as fragmented stability. A recall is classified as fragmented stability if it satisfies the empirical definition $\mathcal{FS}_{ij,s+1}(\tau,\kappa)$ for the threshold pair (τ,κ). For each year t, $R_t^{\mathcal{FS}} = \sum_{i,j,s\in t} \mathcal{FS}_{ij,s+1}$, $R_t^{-\mathcal{FS}} = \sum_{i,j,s\in t} r_{ij,s+1}\mathbf{1}\{c_{ijs} = c_{ij,s+1} = FTC\} - R_t^{\mathcal{FS}}$, and $N_t = \mathcal{H}_t^{FTC} - R_t$, where H_t^{FTC} denotes total fixed-term hires, R_t denotes FTC-to-FTC recalls under the baseline last-employer definition, and N_t denotes non-recall fixed-term hires in year t. The decomposition is computed separately for each year from 2012 to 2019. Each bar reports the unweighted arithmetic mean of the corresponding annual share. Thus, for example, the reported fragmented-stability share is $\frac{1}{8}\sum_{t=2012}^{2019} R_t^{\mathcal{FS}}/\mathcal{H}_t^{FTC}$, with analogous definitions for $R_t^{-\mathcal{FS}}/\mathcal{H}_t^{FTC}$ and $N_t/\mathcal{H}_t^{FTC}$. Shares are expressed as percentages and are computed for the non-farm private sector, using the sample to which the recall definition and the corrections described in Appendix C.3 are applied. Own calculations based on the *Déclarations Préalables à l'Embauche* (DPAE).

The figure shows that fragmented stability is not a marginal component of recall flows. Its share rises from 18.7 percent of total FTC hires under the most restrictive threshold pair $(7,0)$ to 33.3 percent under the benchmark pair $(14,3)$ and 40.6 percent under the least restrictive pair $(30,7)$. Conversely, the share of non-fragmented recalls falls from 38.7 to 24.1 and 16.8 percent. Under the benchmark definition, which already imposes fairly stringent conditions—a return within 14 days and a difference in contract duration of no more than three days—fragmented-stability recalls nevertheless account for the majority of recalls.

These magnitudes indicate that a substantial part of recall hiring reflects the repeated reactivation of existing employer–worker dyads through short and closely similar FTCs, rather than isolated returns to a former employer. Fragmented stability is therefore not merely a sequence-level pattern but a quantitatively important margin of labour market adjustment in the French dual labour market. The residual category N_t should nevertheless not be interpreted as consisting exclusively of new employer–worker relationships, since it may include rehires by employers other than the worker's last employer.

The next subsection turns to the regulatory implications of this pattern and examines its consistency with the rules governing waiting periods and the use of fixed-term contracts.

5.3 Waiting periods and regulatory consistency

The evidence above suggests that many recalls are difficult to interpret as genuinely new employment relationships. They are concentrated in short fixed-term contracts, often repeated within the same employer–worker pair, and frequently separated by short interruptions. This raises the question of whether such sequences are consistent with the regulatory framework governing fixed-term contracts. We examine this issue through the waiting-period rules applying to successive fixed-term contracts.[15]

The legal waiting period is computed as a function of the duration of the fixed-term contract that has just expired, including renewals where relevant. This point matters for the empirical implementation because the renewal rule changed during our sample period. Before the 2015 reform, a fixed-term contract could be renewed only once. From 2015 onward, it may be renewed twice. Since formal renewals are not directly observed in the data, we construct an empirical reference duration that reflects this institutional change while remaining local to the most recent spells observed in the employer–worker dyad.

To formalise this question, let

$$W_{ij,s+1} = \mathbf{1}\{G_{ijs} \geq \omega(\widetilde{D}_{ijs})\},$$

where G_{ijs} is the interruption between the spell s and the spell $s+1$ in dyad (i,j). The reference duration used to compute the waiting period is $\widetilde{D}_{ijs} = D_{ijs} + Z_{ijs}D_{ijs-1}$, where Z_{ijs} is a dummy variable indicating whether the reference duration can include a second contract immediately preceding in the same dyad from 2015 onward.[16] Under the default French rule, the waiting period function is

$$\omega(\widetilde{D}_{ijs}) = \begin{cases} \dfrac{1}{2}\widetilde{D}_{ijs}, & \text{if } \widetilde{D}_{ijs} < 14, \\ \dfrac{1}{3}\widetilde{D}_{ijs}, & \text{if } \widetilde{D}_{ijs} \geq 14. \end{cases}$$

The indicator $W_{ij,s+1}$ therefore takes the value one when the observed interruption is at least as long as the waiting period implied by the reference duration $\widetilde{D}_{ijs}$, given the information available in the data.

This indicator complements the fragmented-stability measure introduced above. While $\mathcal{FS}_{ij,s+1}$ captures whether a recall sequence displays the empirical features of continuation-like attachment, $W_{ij,s+1}$ asks whether the same sequence is consistent with the waiting-period constraint imposed by the legal framework. The issue is therefore not only whether recalls look like fragmented continuation,

[15] In broad terms, waiting-period rules are intended to limit the immediate succession of fixed-term contracts by requiring an interruption between two contracts in a number of cases, while renewal limits restrict the repeated extension of the same temporary employment relationship. The analysis below does not establish legal qualification at the contract level, since the administrative data do not contain all the information required for that purpose. It instead asks whether the observed recall sequences are consistent with the spirit of these constraints.

[16] Formally, $Z_{ijs} = 1$ if spell s is observed in 2015 or later and the immediately preceding spell $s-1$ is observed in the same dyad (i,j), and $Z_{ijs} = 0$ otherwise.

but also whether such continuation-like sequences remain compatible with the intended limits on repeated use of fixed-term contracts.

Table 11: Share of recall transitions satisfying the waiting-period criterion

	2012	2013	2014	2015	2016	2017	2018	2019	Average
Consistent with rule	64.99	67.02	66.63	58.31	57.56	57.46	56.93	57.00	60.74
Not consistent with rule	35.01	32.98	33.37	41.69	42.44	42.54	43.07	43.00	39.26
N	2,701,227	3,588,595	3,964,358	4,245,723	4,569,827	4,793,277	4,871,691	4,960,095	4,211,849

Notes: The table reports the empirical counterpart of $\Pr(W_{ij,s+1} = 1)$, where $W_{ij,s+1} = 1$ if the interruption between two successive FTC spells in the same employer–worker dyad is at least as long as the waiting period required by law, given the duration of the preceding contract. The sample is restricted to recall transitions between two FTCs with the same employer. A transition is classified as consistent with the criterion when the observed interruption is at least as long as the waiting period implied by the empirical reference duration $\widetilde{D}_{ijs}$ defined in the text. The waiting period equals one half of $\widetilde{D}_{ijs}$ when $\widetilde{D}_{ijs} < 14$ days and one third otherwise. Shares are computed as a percentage of all FTC recall transitions. Calculations are based on calendar days and are made on the sample for which the recall definition and corrections described in Section C.3 are applied over the period 2012–2019. Own calculations based on the 'Déclaration Préalable à l'Embauche' (DPAE).

Table 11 reports the empirical counterpart of $\Pr(W_{ij,s+1} = 1)$, that is, the share of recall transitions between two FTCs that satisfy the waiting-period criterion based on the information observed in the data. On average, around 60 percent of recall transitions between two FTCs with the same employer satisfy this criterion, while about 40 percent do not.

This finding should be interpreted with caution. Because the data do not identify contractual motives or task characteristics, the table cannot establish non-compliance at the individual level. This limitation is particularly relevant for longer FTCs, since successive contracts may involve different positions. The indicator $W_{ij,s+1}$ should therefore be viewed as an empirical classification device rather than a legal verdict.[17] The results nevertheless indicate that a substantial share of recall sequences does not satisfy the empirical waiting-period criterion.

Overall, the evidence in this section points to a specific form of employment fragmentation. Many recalls are separated by short interruptions, with a median gap of only a few days between two consecutive FTCs with the same employer. They therefore often resemble interrupted continuations of the same employer–worker match rather than isolated new employment relationships. The waiting-period evidence adds an institutional dimension to the broader pattern of repeated fixed-term hiring: a substantial share of recall transitions appears difficult to reconcile with the intended constraints on the repeated use of fixed-term contracts. Although the paper cannot establish legal non-compliance contract by contract, the results raise broader questions about the practical reach of these rules.

6 Conclusion

This paper documents a neglected margin of labour market dualism: repeated hiring by the same employer through short fixed-term contracts. Using exhaustive French hiring declarations, we show that

[17] Robustness checks based on alternative adjustments for non-working days yield the same qualitative conclusion. Appendix D.4 shows that waiting-period consistency is lower following longer FTCs, although some of these transitions may involve different positions. Since short FTCs account for the overwhelming majority of recalls, most potentially problematic sequences nevertheless remain concentrated in this segment.

recalls account for a large share of entries into employment, occur overwhelmingly through fixed-term contracts, and often involve repeated short-duration spells with the same employer. These patterns reveal employer–worker relationships that persist at the dyad level while remaining fragmented at the contractual level, a configuration we term *fragmented stability*. To operationalise this concept, we classify a recall transition between two fixed-term contracts as fragmented stability when the return occurs after a short interruption and the durations of the two successive contracts differ only slightly. Applying this metric over a range of interruption and duration-difference thresholds shows that fragmented stability accounts for a substantial share of recall transitions and represents a quantitatively important component of fixed-term hiring flows.

The results also speak to a broader issue in the recall literature. Returning to a previous employer is not equivalent to forming a new match, as emphasised by Fujita & Moscarini (2017). In a dual labour market, this distinction takes a particular form: a worker may repeatedly return to the same employer while remaining in a highly unstable contractual situation. Measures based on contract starts may therefore overstate the formation of new employer–worker dyads while understating the repeated reactivation of existing ones. The fragmented-stability metric makes this distinction empirically operational and identifies a specific margin through which labour market dualism operates in practice.

The waiting-period analysis adds an institutional dimension to this pattern. Many observed recall sequences are separated by very short interruptions and appear difficult to reconcile with a strict reading of the intended constraints governing the repeated use of fixed-term contracts. The analysis does not establish legal non-compliance at the level of individual contracts, but it suggests that these formal constraints may have a more limited practical reach than the regulatory framework would imply. Although the present data do not allow us to examine wages or productivity directly, fragmented stability may also have consequences beyond the contractual margin, potentially affecting wage progression, access to training, and career development among the workers most exposed to this pattern.

More broadly, this paper provides an empirical foundation for the analysis of recalls in dual labour markets. It documents the prevalence, contractual form, recurrence, and timing of recalls and introduces a transparent metric that combines returns to the same employer, short interruptions, and similarity in contract duration. The present paper therefore establishes both the prevalence of fragmented-stability transitions and their importance in fixed-term hiring flows. Assessing their welfare implications requires linked information on earnings, hours, unemployment benefits, and firm outcomes. Developing such an analysis, and in particular a structural model of fixed-term contracts and recalls, is therefore a natural next step.[18]

[18] Existing structural work on recalls remains limited and has been developed in a markedly different institutional environment, namely the U.S. labour market; see, among others, Fernández-Blanco (2013), Fujita & Moscarini (2017), Albertini et al. (2023), and Gertler et al. (2026).

References

Alba-Ramírez, A., Arranz, J. M. & Muñoz-Bullón, F. (2007), 'Exits from unemployment: Recall or new job', *Labour Economics* **14**(5), 788–810.

Albertini, J., Fairise, X. & Terriau, A. (2023), 'Unemployment insurance, recalls, and experience rating', *Journal of Macroeconomics* **75**, 103482.

Anderson, P. M. (1992), 'Time-varying effects of recall expectation, a reemployment bonus, and job counseling on unemployment durations', *Journal of Labor Economics* **10**(1), 99–115.

Arranz, J. M. & García-Serrano, C. (2014), 'The interplay of the unemployment compensation system, fixed-term contracts and rehirings: the case of spain', *International Journal of Manpower* .

Bentolila, S., Dolado, J. & Jimeno, J. (2020), Dual Labor Markets Revisited, Oxford Research Encyclopedias, Economics and Finance.

Berton, F. & Garibaldi, P. (2012), 'Workers and Firms Sorting into Temporary Jobs', *The Economic Journal* **122**(562), F125–F154.

Blanchard, O. & Landier, A. (2002), 'The Perverse Effects of Partial Labor Market Reform: Fixed Duration Contracts in France', *The Economic Journal* **112**(480), F214–F244.

Boeri, T. & Garibaldi, P. (2007), 'Two Tier Reforms of Employment Protection: a Honeymoon Effect?', *The Economic Journal* **117**(521), 357–385.

Boeri, T. & Garibaldi, P. (2024), 'Temporary employment in markets with frictions', *Journal of Economic Literature* **62**(3), 1143–1185.

Cahuc, P., Charlot, O. & Malherbet, F. (2012), 'Explaining the spread of temporary jobs and its impact on labor turnover', *IZA Discussion Papers 6365* .

Cahuc, P., Charlot, O. & Malherbet, F. (2016), 'Explaining the spread of temporary jobs and its impact on labor turnover', *International Economic Review* **57**(2), 533–572.

Cahuc, P., Charlot, O., Malherbet, F., Benghalem, H. & Limon, E. (2020), 'Taxation of temporary jobs: good intentions with bad outcomes?', *The Economic Journal* **130**(626), 422–445.

Cahuc, P. & Postel-Vinay, F. (2002), 'Temporary jobs, employment protection and labor market performance', *Labour Economics* **9**(1), 63–91.

Cappellari, L., Dell'Aringa, C. & Leonardi, M. (2012), 'Temporary employment, job flows and productivity: A tale of two reforms', *The Economic Journal* **122**(562), F188–F215.

Castro, R., Lange, F. & Markus, P. (2024), 'Labor force transitions', *forthcoming Handbook of Labor Economics* .

Centeno, M. & Novo, Á. A. (2012), 'Excess worker turnover and fixed-term contracts: Causal evidence in a two-tier system', *Labour Economics* **19**(3), 320–328.

Corak, M. (1996), 'Unemployment insurance, temporary layoffs, and recall expectations', *The Canadian Journal of Economics/Revue canadienne d'Economique* **29**, S1–S7.

DARES (2006), 'Le contrat nouvelles embauches', *Premières synthèses, premières informations* .

Feldstein, M. (1976), 'Temporary layoffs in the theory of unemployment', *Journal of political economy* **84**(5), 937–957.

Feldstein, M. S. (1975), 'The importance of temporary layoffs: an empirical analysis', *Brookings Papers on Economic Activity* **1975**(3), 725–745.

Fernández-Blanco, J. (2013), 'Labor market equilibrium with rehiring', *International Economic Review* **54**(3), 885–914.

Fontaine, F. & Malherbet, F. (2016), *CDD vs CDI: les effets d'un dualisme contractuel*, Presses de Sciences Po.

Fujita, S. & Moscarini, G. (2017), 'Recall and unemployment', *American Economic Review* **107**(12), 3875–3916.

Gertler, M., Huckfeldt, C. & Trigari, A. (2026), 'Temporary layoffs, loss-of-recall, and cyclical unemployment dynamics', *American Economic Review* **116**(3), 862–896.

Gouyon, M. & Obser, J. (2023), 'Comment les employeurs recourent-ils aux contrats courts?', *DARES Analyses* .

Hall, R. E. & Kudlyak, M. (2022), 'The unemployed with jobs and without jobs', *Labour Economics* **79**, 102244.

Haltiwanger, J. (1984), 'The distinguishing characteristics of temporary and permanent layoffs', *Journal of Labor Economics* **2**(4), 523–538.

Jansson, F. (2002), 'Rehires and unemployment duration in the swedish labour market—new evidence of temporary layoffs', *Labour* **16**(2), 311–345.

Kahn, L. M. (2010), 'Employment protection reforms, employment and the incidence of temporary jobs in europe: 1996–2001', *Labour Economics* **17**(1), 1–15.

Katz, L. F. (1986), Layoffs, recall and the duration of unemployment, Technical report, National Bureau of Economic Research.

Katz, L. F. & Meyer, B. D. (1990), 'Unemployment insurance, recall expectations, and unemployment outcomes', *The Quarterly Journal of Economics* **105**(4), 973–1002.

Lam, J. F. & Qiu, X. (2024), Job recalls and worker flows over the life cycle, Technical report, Unpublished manuscript.

Le Barbanchon, T. & Malherbet, F. (2013), An anatomy of the french labour market: country case studies on labour market segmentation, Technical report, International Labour Organization.

Malherbet, F. & Martins, P. (2024), 'The widespread presence and effects of temporary jobs', *Handbook on Labour Markets in Transition* .

Nekoei, A. & Weber, A. (2015), 'Recall expectations and duration dependence', *American Economic Review* **105**(5), 142–46.

Nekoei, A. & Weber, A. (2020), Seven facts about temporary layoffs, Technical report, CEPR Discussion Paper No. DP14845.

Rémy, V. & Simonnet, V. (2021), Quels sont les usages des contrats courts ? pratiques et points de vue d'employeurs et de salariés, Technical report, Direction de l'animation de la recherche, des études et des statistiques.

Røed, K. & Nordberg, M. (2003), 'Temporary layoffs and the duration of unemployment', *Labour Economics* **10**(3), 381–398.

Appendix

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A Fixed-term Contract Legislation

This appendix briefly summarises the legal framework governing fixed-term contracts (FTCs) in France. The purpose is not to provide an exhaustive legal discussion, but to clarify the institutional background relevant for interpreting recalls and waiting-period rules.

General principle. Under French labour law, the open-ended contract (OEC) is the normal and general form of the employment relationship.[19] By contrast, the FTC is a derogatory contract intended to cover temporary labour needs. Its use is therefore restricted to a limited set of situations, including temporary increases in activity, seasonal jobs, and replacement of absent workers.[20] Breaches of these rules may lead the labour court to reclassify the contract as open-ended.

Duration and renewals. In the general case, there is no minimum legal duration for an FTC. Its maximum duration, including renewals, is generally 18 months, although some exceptions apply.[21] Since 2015, an FTC may be renewed at most twice, instead of once previously.[22] Since 2017, sectoral agreements may depart from the default legal rules on duration, renewal, and waiting periods.[23] These institutional changes do not appear to have materially altered the broad patterns of FTC use over the period studied here.

Waiting periods. Before a worker can be rehired on an FTC in the same position or job, a waiting period (*délai de carence*) may apply between two successive contracts. Under the default legal rule, if the previous employment spell lasted less than 14 days, the waiting period is equal to half of that duration; otherwise, it is equal to one-third.[24] In the paper, this rule is summarised by the function $\omega(D_{ijs})$ used in Section 5.3. Because the administrative data do not contain all the information required to determine whether the rule applies in every individual case, the paper interprets consistency with the waiting-period criterion as an empirical measure rather than as a legal qualification.

[19] Article L1221-2 of the French Labour Code.

[20] We abstract from a number of special cases provided for in the Labour Code and focus on the general case relevant for the paper.

[21] For example, the maximum duration may be 9 months when the contract is signed while waiting for a permanent worker, and 24 months in some cases related to export orders.

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

[23] Ordinance No. 2017-1386 of September 22, 2017.

[24] Since 2017, Articles L1244-3 and L1244-4 of the French Labour Code allow sectoral agreements to modify or remove the default waiting-period rule. Some FTCs, notably *customary FTCs* (*contrats d'usage*), are also subject to a more flexible legal regime. For this reason, sectors allowed to use such contracts are excluded from the analysis of waiting-period consistency in Section 5.3 and Appendix D.4. This exclusion does not affect the main results of the paper on recalls and repeated hiring, which continue to hold when those sectors are excluded more generally.

B Measurement issues and interpretation

This appendix discusses the main measurement issues raised by the administrative data and clarifies how they affect the interpretation of the empirical results.

Recalls and conversions. A first limitation concerns the conversion of a fixed-term contract (FTC) into an open-ended contract (OEC). In the administrative hiring declarations, such conversions are difficult to observe because a new declaration is not necessarily required when an FTC is converted into an OEC (Malherbet & Martins 2024). As a result, our measure of recalls does not capture cases in which an OEC immediately follows an FTC within the same firm without a new declaration. In practice, the recalls observed in the data mainly correspond to FTCs following FTCs and OECs following OECs. This may lead some forms of employment continuity to be under-recorded, but it is unlikely to alter the main results materially, since the overwhelming majority of observed recall sequences concern short FTCs.

Recalls and renewals. A second issue concerns the distinction between recalls and renewals. From a legal point of view, a renewal corresponds to the continuation of the same fixed-term employment relationship, whereas a recall involves an interruption followed by re-employment. In practice, however, the administrative data do not contain all the information needed to assign a strict legal classification to each observed transition.

This limitation is important for interpretation. Seamless renewals are often not observed because a new declaration is not always required when two contracts follow one another without interruption.[25] By contrast, transitions involving an interruption generate a new declaration and therefore enter our data. The paper therefore studies repeated employer–worker sequences through their observable features: interruption length, persistence of contractual format, and consistency with the waiting-period rule. This does not affect the central result of the paper: a substantial share of employment adjustment in a dual labour market takes the form of repeated, fragmented continuation of the same employer–worker relationship.

[25] According to the Ministry of Labour, such cases account for a substantial share of all renewals; see, for example, Gouyon & Obser (2023).

C Data construction and sample definition

This appendix describes the data source, the construction of the estimation sample, and the main variables used in the paper. It also reports complementary results based on alternative definitions of recall and discusses several limitations inherent to the administrative data.

C.1 Source data

The analysis relies on the *Déclarations Préalables à l'Embauche* (DPAE), i.e. mandatory pre-employment declarations filed by employers to the Urssaf before a worker is hired.[26] DPAE must be submitted within eight days before the expected hiring date and cover all employees under the general Social Security scheme. They therefore provide a near-exhaustive record of hiring declarations in the relevant scope of private-sector employment.

DPAE are declarations of intended hires rather than direct records of realized employment relationships. In principle, this may lead hires to be overstated. In practice, however, this bias is likely to be limited. Employers are required to cancel the declaration when the hire does not materialize, and survey evidence suggests that the large majority of DPAE do result in realized hires (DARES 2006).

Each DPAE contains information on the employer, the worker, and the contract. On the employer side, the data include an identifier, the main activity, the legal category, and firm size. On the worker side, they include an anonymized identifier, age, and gender. On the contract side, they report the contract type (FTC or OEC), the start date, and, for FTCs, the expected end date. These variables allow us to identify repeated employer–worker matches and to measure the expected duration of fixed-term contracts.

C.2 Sample restrictions

The analysis is restricted to private-sector employment, identified from the legal classification of employers. This choice reflects the scope in which DPAE are effectively exhaustive. Coverage of the public sector is more limited, since declarations are mandatory only for contract agents.

Within the private sector, two sectors are excluded: agriculture and temporary work agencies. Agricultural employees are covered by a separate social security system, so DPAE are not exhaustive for that sector. Temporary work is also excluded because declarations are filed by temporary work agencies rather than by user firms, which prevents the identification of the effective employer.

The analysis covers the period 2012–2019. Information on contract type (FTC versus OEC) is available from 2005 onward, but the expected end date of FTCs is only systematically recorded from 2011. Starting in 2012 therefore allows us to observe contract duration consistently. The sample ends in 2019 in order to abstract from the exceptional labour-market disruptions associated with the COVID-19 crisis.

C.3 Cleaning and harmonisation

We apply a set of corrections to remove suspected duplicates and reporting inconsistencies in the DPAE. Table C.1 reports, for each correction, the number of affected declarations and the corresponding share of the raw non-farm private-sector sample.

Four corrections are implemented. First, when two declarations are observed for the same employer–worker pair with identical declaration and hiring dates, one of the two is dropped. These cases account for less than 1% of the raw data (Duplicate 1 in Table C.1). Second, when an FTC begins before the end of a previous FTC in the same dyad and the two hiring dates are at most 15 days apart, the later declaration is treated as a duplicate and removed. This is the largest correction, affecting between 2 and 3% of observations (Duplicate 2). If these

[26] Urssaf (*Unions de Recouvrement des cotisations de Sécurité Sociale et d'Allocations Familiales*) is the organization in charge of collecting social security contributions in France.

observations were retained, the recall rate would be about 1 to 1.5 percentage points higher, but the qualitative patterns would remain unchanged.

Third, when an OEC is followed by an FTC (or an unknown contract) in the same establishment for the same worker, the initial OEC is treated as a reporting error and dropped, since a worker cannot legally be downgraded from an OEC to an FTC within the same firm (Duplicate 3). Fourth, two successive OEC declarations for the same dyad within 30 days are treated as likely reporting errors or postponed hiring rather than genuine recalls; in such cases, only the most recent declaration is kept (Duplicate 4). This last correction affects about 0.6% of observations. If such cases were retained, the overall recall rate would be around 0.5 percentage points higher, with a somewhat larger share of OEC recalls, although the latter would remain quantitatively small.

Table C.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	21,007,048	21,930,882	22,410,786	22,877,330	
N after corrections	16,974,433	17,648,224	18,394,748	19,018,710	20,024,909	20,880,806	21,327,094	21,766,247	

Notes: Corrections described in Section C.3. The sample is restricted to the private sector, and the corrections are applied to the raw DPAE data to remove potential duplicates and reporting inconsistencies. Shares are reported as percentages of raw hires in the non-farm private sector. Own calculations based on the 'Déclaration Préalables à l'Embauche' (DPAE).

The last two rows of Table C.1 report the number of DPAE before and after cleaning. Overall, the corrections reduce the sample by about 5%, leaving roughly 20 million declarations per year on average.

In the main text, most statistics are computed year by year, and the corrections are applied at the yearly level. By contrast, when studying gaps between successive recalls, corrections are applied over the full 2012–2019 period in order to account for transitions crossing calendar years. Table C.2 reports the resulting number of observations by year.

Table C.2: DPAE sample when corrections are applied to the full 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 DPAE between 2012 and 2019 in the non-farm private sector when the corrections described in Section C.3 are applied to the full 2012–2019 period. The tables in Section 5 are based on this sample. Own calculations based on the 'Déclaration Préalables à l'Embauche' (DPAE).

C.4 Distribution of entries into employment by sector

After the cleaning steps described above, the final sample contains slightly more than 156 million DPAE over the period 2012–2019. The number of declarations in the private sector increases by about 28% over the period. Table C.3 reports the sectoral distribution of entries into employment in the final sample. Hiring declarations are highly concentrated across sectors: on average, 7 out of 20 sectors account for more than 80% of all entries. The largest shares are observed in accommodation and food services, human health and social work activities, and arts, entertainment, and recreation.

Table C.3: Entries into employment by sector

	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 sector in the non-farm private sector. Shares are computed as percentages of all entries. Sector classification follows NAF rev. 2. Own calculations based on the 'Déclaration Préalables à l'Embauche' (DPAE).

C.5 Distribution of entries into employment by contract type

Table C.4 reports the distribution of entries into employment by contract type in the final sample. DPAE with unknown contract type are relatively frequent at the beginning of the period, but account for only about 1% of declarations by 2019.[27] This decline appears to reflect improved reporting quality over time, especially for FTCs with a recorded end date.

Table C.4: Entries into employment by contract type (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 reports the average over the period. The first line corresponds to DPAE for which contract type is unknown. The second and third lines correspond to FTCs, with and without an expected end date, respectively. The fourth line corresponds to OECs. Shares are reported in brackets as percentages of total DPAE. N denotes the sample size. Own calculations based on the 'Déclaration Préalables à l'Embauche' (DPAE).

Two patterns are worth noting for FTCs. First, missing end dates become progressively rare over the period. Second, the number of FTC declarations increases steadily, by about 36% between 2012 and 2019. OEC declarations also rise over the period, by about 47%, after a temporary decline in 2013.

C.6 Construction of recall histories

In the main text, recalls are defined with respect to the last employer. Operationally, for each worker, DPAE are ordered by hiring date, and a hire is classified as a recall if the immediately preceding declaration involves the same employer identifier.

[27] Given the limited information available on establishments and workers, we do not impute missing contract type or missing FTC end dates.

As a robustness check, we also consider a broader definition of recall. Under this alternative definition, once a worker has been hired by an employer, any subsequent hire by the same employer is treated as a recall, even if another employer appears in the intervening period. Table C.5 reports the corresponding recall share. Relative to the baseline definition used in the text, the broader definition increases the average share of recalls among hires from 44.62% to 53.55%. This confirms that recalls with the last employer account for the bulk of repeated hiring, although non-immediate recalls are also quantitatively relevant.

Table C.5: 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	20,024,909	20,880,806	21,327,094	21,766,247	

Notes: Number and share of recalls between 2012 and 2019 for all contract types (OECs, FTCs, and unknown contracts) in the non-farm private sector. Shares are computed as percentages of total hires. Under the broad definition, a hire is classified as a recall whenever the worker has already been employed by the same employer at some point in the past, even if that employer is not the last one observed before the new hire. Hence, in 2019, 53.29% of entries into employment are recalls under this broader definition. Own calculations based on the 'Déclaration Préalables à l'Embauche' (DPAE).

Tables C.6 and C.7 show that the main patterns documented in the text are robust to this alternative definition. First, recalls remain overwhelmingly concentrated in FTCs: as in the baseline definition, about 97% of recalls are on FTCs. Second, recalled FTCs remain overwhelmingly short: contracts lasting less than one month continue to account for around 90 to 93% of recalled FTCs. The broader definition therefore changes the level of the recall rate, but not the main substantive conclusions of the paper.

Table C.6: 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 type in the non-farm private sector. Under the broad definition, a hire is classified as a recall whenever the worker has already been employed by the same employer at some point in the past, even if that employer is not the last one observed before the new hire. The line 'Unknown' indicates contracts for which contract type is not recorded in the DPAE. The last line reports the total number of recalls. Hence, in 2019, 98.75% of recalls are on FTCs and less than 1% are on OECs. Own calculations based on the 'Déclaration Préalables à l'Embauche' (DPAE).

Table C.7: Duration of FTCs upon recall by duration – broad definition of recall

	2012	2013	2014	2015	2016	2017	2018	2019	Average
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

Notes: Share of entries into recalled employment on FTCs between 2012 and 2019 by contract duration in the non-farm private sector. Under the broad definition, a hire is classified as a recall whenever the worker has already been employed by the same employer at some point in the past, even if that employer is not the last one observed before the new hire. Shares are computed as percentages of all recalled FTC entries. Hence, in 2019, recalled FTCs lasting 1 to 3 months account for 4.29% of all recalled FTC entries. Own calculations based on the 'Déclaration Préalables à l'Embauche' (DPAE).

D Robustness

D.1 Additional evidence on recall patterns

This appendix provides two additional robustness checks. First, we re-estimate equation (1) using a logit specification:

$$\Pr(R_{ijh} = 1 \mid X_{ijh}) = \Lambda(\alpha + \beta_1 \mathbf{1}\{D_{ijh} < 30\} + \beta_2 \mathbf{1}\{D_{i,h-1} < 30\} + \lambda_t + \delta_s)\,, \tag{D.1}$$

where $\Lambda(z) = 1/(1+e^{-z})$ is the logistic cdf, $R_{ijh} = 1$ if hire h of worker i by employer j is a recall, $\mathbf{1}\{D_{ijh} < 30\}$ indicates that the current contract lasts less than one month, and $\mathbf{1}\{D_{i,h-1} < 30\}$ indicates that the worker's previous contract, irrespective of employer, lasted less than one month. As in the baseline specification, λ_t and δ_s denote year and sector dummies, respectively. Second, we modify the econometric specification of equation (1) by replacing $\mathbf{1}\{D_{i,h-1} < 30\}$ with $\mathbf{1}\{D_{ij,h-1} < 30\}$, so that the second duration indicator is defined with respect to the previous contract in the same employer–worker dyad rather than the worker's previous contract irrespective of employer. This alternative specification is more directly tied to repeated attachment within a given dyad. The corresponding estimates are reported in Tables D.1 and D.2. As by definition $\mathbf{1}\{D_{ij,h-1} < 30\}$ can be equal to one only for recalls, we observe that its effect is higher than with the specification $\mathbf{1}\{D_{i,h-1} < 30\}$, and captures a part of what was explained by the current FTC duration in Table 5.

Table D.1: Logit model of recall status

	(1)	(2)	(3)	(4)
Current FTC $\leq$ 1 month	1.032***	1.037***	1.054***	1.061***
	(0.002)	(0.002)	(0.003)	(0.003)
Previous FTC $\leq$ 1 month	2.812***	2.819***	2.887***	2.897***
	(0.002)	(0.002)	(0.003)	(0.003)
Constant	-2.786***	-2.628***	-3.360***	-3.233***
	(0.004)	(0.005)	(0.084)	(0.083)
Year fixed effects	No	Yes	No	Yes
Sector fixed effects	No	No	Yes	Yes
Observations	156,035,171	156,035,171	156,035,171	156,035,171
Log-likelihood	-7.10e+07	-7.10e+07	-6.81e+07	-6.80e+07

Notes: Estimates of a logit model on the entire sample of hires. The dependent variable is equal to 1 if the hire is a recall and 0 if it is a non-recall hire. Standard errors are clustered at the employer–worker dyad level. Significance levels: *p<0.1, **p<0.05, ***p<0.01. Own calculations based on the 'Déclaration Préalables à l'Embauche (DPAE)'.

Compared with Table 5, Table D.1 shows that the qualitative pattern is unchanged: short FTCs are positively associated with recall, and the association is especially strong when the preceding contract was also short. This reinforces the view that recalls are closely tied to repeated sequences of very short fixed-term contracts.

Table D.2: Linear probability model of recall status with an alternative definition of the previous contract

	(1)	(2)	(3)	(4)
Current FTC $\leq$ 1 month	0.008***	0.009***	0.021***	0.022***
	(0.0002)	(0.0002)	(0.0003)	(0.0003)
Previous FTC $\leq$ 1 month	0.747***	0.747***	0.745***	0.746***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Constant	0.073***	0.072***	0.065***	0.064***
	(0.0002)	(0.0002)	(0.0003)	(0.0003)
Year fixed effects	No	Yes	No	Yes
Sector fixed effects	No	No	Yes	Yes
Observations	156,035,171	156,035,171	156,035,171	156,035,171
Adjusted R^2	0.571	0.572	0.586	0.586

Notes: Estimates of a linear probability model on the entire sample of hires. The dependent variable is equal to 1 if the hire is a recall and 0 if it is a non-recall hire. Standard errors are clustered at the employer–worker dyad level. Significance levels: *p<0.1, **p<0.05, ***p<0.01. Own calculations based on the 'Déclaration Préalables à l'Embauche (DPAE)'.

Compared with Table 5, the qualitative pattern is unchanged, but the effect of the previous short FTC becomes even stronger when the previous contract is defined within the same employer–worker dyad. This suggests that recalls are closely tied to repeated short-contract sequences within a given relationship and, more broadly, supports the idea of persistent attachment at the match level despite contractual fragmentation.

D.2 Additional evidence on worker exposure

This appendix complements the results reported in Section 4.3 by re-estimating equation (2) using a logit specification:

$$\Pr(Y_{it} = 1 \mid X_{it}) = \Lambda\left(\alpha + \beta\, Female_i + \sum_a \gamma_a AgeGroup_{ia} + \lambda_t + \delta_s\right), \tag{D.2}$$

where $\Lambda(z) = 1/(1+e^{-z})$ is the logistic cdf, $Y_{it} = 1$ if worker i experiences at least one recall during year t, and 0 otherwise. As in the baseline specification, λ_t and δ_s denote year and sector dummies. The corresponding estimates are reported in Table D.3.

Table D.3: Logit model with worker recall exposure as dependent variable

	(1)	(2)	(3)	(4)
Women	0.450***	0.450***	0.157***	0.158***
	(0.001)	(0.001)	(0.001)	(0.001)
Ag 16–24	0.152***	0.153***	0.198***	0.199***
	(0.001)	(0.001)	(0.001)	(0.001)
Ag 35–44	0.130***	0.130***	0.092***	0.093***
	(0.001)	(0.001)	(0.001)	(0.001)
Ag 45–54	0.212***	0.213***	0.157***	0.158***
	(0.002)	(0.002)	(0.002)	(0.002)
Ag 55+	0.455***	0.457***	0.354***	0.356***
	(0.002)	(0.002)	(0.002)	(0.002)
Constant	-1.581***	-1.635***	-2.337***	-2.375***
	(0.001)	(0.001)	(0.041)	(0.041)
Year fixed effects	No	Yes	No	Yes
Sector fixed effects	No	No	Yes	Yes
Observations	49,550,095	49,550,095	48,139,416	48,139,416
Log-likelihood	-2.65e+07	-2.64e+07	-2.21e+07	-2.21e+07

Notes: Estimates of a logit model on the sample of workers hired at least once during the year. The dependent variable is equal to 1 if the worker experiences at least one recall during the year and 0 otherwise. Standard errors are clustered at the employee level. Significance levels: *p<0.1, **p<0.05, ***p<0.01. Own calculations based on the 'Déclaration Préalables A l'Embauche (DPAE)'.

The logit estimates confirm the baseline LPM results reported in Table 8. The qualitative patterns are unchanged: women and workers at both ends of the age distribution are more exposed to recalls, and the estimated gaps are attenuated, but remain statistically significant, once sector fixed effects are introduced.

D.3 Additional evidence on the link between contract duration and interruption length

This appendix complements Section 5.2 by examining more directly the relationship between the duration of the preceding fixed-term contract and the interruption separating two successive spells in the same employer–worker dyad. The evidence in the main text shows that many recalls occur after very short interruptions, especially following short contracts. The purpose of the specifications below is to verify that this pattern remains visible in a simple multivariate framework.

We retain the sequence-level notation introduced in Section 5. Let D_{ijs} denote the duration of spell s for worker i with employer j, and G_{ijs} the interruption in calendar days between spell s and spell $s+1$. The sample is restricted to recall transitions between two FTCs for which contract duration is observed.

We first estimate the following linear specification:

$$G_{ijs} = \alpha + \beta_1 D_{ijs} + \beta_2 \mathbf{1}\{D_{ijs} < 30\} + \gamma' Z_i + \delta_t + \lambda_s + u_{ijs}, \tag{D.3}$$

where $\mathbf{1}\{D_{ijs} < 30\}$ is an indicator equal to one if the preceding FTC lasted less than one month, Z_i denotes observable worker characteristics, δ_t year fixed effects, and λ_s sector fixed effects. The coefficient β_2 captures whether short preceding contracts are associated with systematically shorter interruptions before recall.

Because the interpretation developed in Section 5.2 focuses on the prevalence of short interruptions rather than only on average gap length, we also estimate the following linear probability specification:

$$\mathbf{1}\{G_{ijs} \leq \tau\} = \alpha + \beta_1 D_{ijs} + \beta_2 \mathbf{1}\{D_{ijs} < 30\} + \gamma' Z_i + \delta_t + \lambda_s + u_{ijs}, \tag{D.4}$$

where τ is a threshold for what counts as a short interruption. In practice, we set $\tau = 7$ days in the baseline specification and consider alternative thresholds as robustness checks.

Table D.4 reports the estimates of equation (D.3). Table D.5 reports the estimates of equation (D.4). Across specifications, shorter preceding FTCs are associated with shorter interruptions and with a significantly higher probability of very short gaps before recall. These results are consistent with the interpretation of recalls as fragmented continuation within ongoing employer–worker relationships.

Table D.4: Gap length and the duration of the preceding FTC

	(1)	(2)	(3)	(4)	(5)
Duration of preceding FTC (days)	-0.1355***	-0.1373***	-0.1805***	-0.1824***	-0.1811***
	(0.00271)	(0.00270)	(0.00263)	(0.00262)	(0.00263)
Preceding FTC < 30 days	-74.5469***	-74.3157***	-64.3073***	-64.0749***	-64.1048***
	(0.26532)	(0.26440)	(0.24802)	(0.24708)	(0.24759)
Female					-0.0996***
					(0.04535)
Age 16–24					4.8777***
					(0.04644)
Age 35–44					0.1471***
					(0.04875)
Age 45–54					1.0845***
					(0.05814)
Age 55+					6.3000***
					(0.09236)
Constant	95.4825***	95.2956***	86.7168***	86.5298***	84.3733***
	(0.27776)	(0.27681)	(0.25993)	(0.25896)	(0.26195)
Year fixed effects	No	Yes	No	Yes	Yes
Sector fixed effects	No	No	Yes	Yes	Yes
Worker controls	No	No	No	No	Yes
Observations	73,916,264	73,916,264	73,916,264	73,916,264	73,890,878
R^2	0.045	0.047	0.079	0.081	0.082

Notes: OLS estimates of equation (D.3). The dependent variable is the interruption in calendar days between two successive FTC spells in the same employer–worker dyad. The sample is restricted to recall transitions between two FTCs for which contract duration is observed. The omitted age category is 25–34. Standard errors are clustered at the employer–worker dyad level. Significance levels: *p<0.1, **p<0.05, ***p<0.01. Own calculations based on the 'Déclaration Préalables à l'Embauche' (DPAE).

Table D.4 confirms that short FTCs are followed by much shorter interruptions before recall. Even after controlling for year, sector, and worker characteristics, a preceding FTC lasting less than one month is associated with a gap that is about 64 days shorter. This pattern supports the view that many recalls reflect a fragmented continuation of the same employer–worker dyad.

Table D.5: Short gaps and the duration of the preceding FTC

	(1)	(2)	(3)	(4)	(5)
Duration of preceding FTC (days)	-0.0007***	-0.0007***	-0.0004***	-0.0004***	-0.0004***
	(0.000003)	(0. 000003)	(0. 000002)	(0. 000002)	(0. 000002)
Preceding FTC < 30 days	0.2637***	0.2633***	0.2045***	0.2041***	0.2050***
	(0.00044)	(0.00044)	(0.00043)	(0.00043)	(0.00043)
Female					-0.0176***
					(0.00045)
Age 16–24					-0.0309***
					(0.00044)
Age 35–44					-0.0082***
					(0.00052)
Age 45–54					-0.0181***
					(0.00063)
Age 55+					-0.0642***
					(0.00089)
Constant	0.4232***	0.4236***	0.4743***	0.4746***	0.5036***
	(0.00042)	(0. 00042)	(0. 00040)	(0. 00040)	(0. 00054)
Year fixed effects	No	Yes	No	Yes	Yes
Sector fixed effects	No	No	Yes	Yes	Yes
Worker controls	No	No	No	No	Yes
Observations	73,916,264	73,916,264	73,916,264	73,916,264	73,890,878
R^2	0.040	0. 040	0. 095	0. 095	0. 097

Notes: Linear probability estimates of equation (D.4). The dependent variable is an indicator equal to one if the interruption between two successive FTC spells in the same employer–worker dyad is shorter than or equal to 7 days. The sample is restricted to recall transitions between two FTCs for which contract duration is observed. The omitted age category is 25–34. Standard errors are clustered at the employer–worker dyad level. Significance levels: *p<0.1, **p<0.05, ***p<0.01. Own calculations based on the 'Déclaration Préalables à l'Embauche' (DPAE).

Table D.5 shows that short FTCs are strongly associated with very short gaps before recall. In the most complete specification, a preceding FTC lasting less than one month increases the probability of a gap shorter than one week by about 20.5 percentage points. This pattern is robust to year and sector fixed effects and worker controls, and is consistent with the idea that recalls after short FTCs often reflect fragmented continuity within the same employer–worker relationship.

D.4 Additional evidence on waiting periods

This appendix complements the evidence reported in Section 5.3 by examining how waiting-period consistency varies with the duration of the preceding fixed-term contract. This provides a direct link between the regulatory discussion in the main text and the earlier evidence showing that recalls are especially concentrated in short fixed-term sequences.

Table D.6 reports the empirical counterpart of $\Pr(W_{ij,s+1} = 1 \mid D_{ijs} \in \mathcal{D})$ by duration category of the preceding FTC. The results show whether apparent inconsistency with the waiting-period criterion is evenly distributed across recall transitions or instead concentrated among short-duration contracts.

Table D.6: Waiting-period consistency by duration of the preceding FTC

Previous FTC duration	Consistent with rule	Not consistent with rule	N
Less than 1 month	62.47	37.53	29,450,415
1 to 3 months	47.76	52.24	2,797,537
3 to 6 months	45.99	54.01	786,234
More than 6 months	25.24	74.76	660,607
Overall	60.14	39.86	33,694,793

Notes: The table reports the empirical counterpart of $\Pr(W_{ij,s+1} = 1 \mid D_{ijs} \in \mathcal{D})$, where $W_{ij,s+1} = 1$ if the interruption between two successive FTC spells in the same employer–worker dyad is at least as long as the waiting period required by law, given the duration of the preceding contract. The sample is restricted to recall transitions between two FTCs with the same employer. A transition is classified as consistent with the criterion when the observed interruption is at least as long as the waiting period implied by the empirical reference duration $\widetilde{D}_{ijs}$ defined in Section 5.3. Shares are computed as a percentage of all FTC recall transitions in the relevant duration category. Calculations are based on calendar days. Own calculations based on the 'Déclaration Préalable à l'Embauche' (DPAE).

Table D.6 shows that waiting-period consistency varies substantially with the duration of the preceding FTC. Overall, about 40 percent of FTC-to-FTC recall transitions are not consistent with our empirical waiting-period criterion. The inconsistency rate is lower after FTCs lasting less than one month, but these contracts account for the overwhelming majority of recall transitions. Although longer FTCs display higher inconsistency rates, some of these cases may involve different positions and therefore may not fall under the waiting-period rule. This caveat is less likely to apply to very short FTCs, for which repeated contracts within the same employer–worker pair are more plausibly part of the same employment relationship. In levels, most potentially problematic sequences therefore remain concentrated in the short-FTC segment.

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