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An Anatomy of the French Labour Market

Abstract

[Excerpt] Over the last decades, many European countries have experienced high and persistent unemployment rates. The bulk of labour market research has tackled this issue by emphasizing the effect of employment protection legislation, hereafter EPL, on labour market performance. As a result, the importance of labour market flexibility has been widely acknowledged. This view can be summarized by the expressed desire of the E.U. council to give member States incentives to *“review and, where appropriate, reform overly restrictive elements in employment legislation that affect labour market dynamics [...] and to undertake other appropriate measures to promote a better balance between work and private life and between flexibility and security”*. It is however striking that most of the reforms undertaken have contrasted sharply with this latter recommendation by favouring reforms *at the margin*.

Those reforms have fostered two-tier systems, as the increase in labour market flexibility has taken place mainly through a series of marginal reforms that liberalized the use of fixed-term and/or non-standard employment contracts. Two-tier systems have promoted the emergence of dual employment protection which can be broadly defined as the coexistence of both long-term contracts, which benefit from stringent protection, and short-term contracts with little or no protection. It is often argued that this combination creates labour market segmentation, traps workers in a recurring sequence of frequent unemployment spells, favours unequal repartition of risk between workers and enhances inequalities. In particular, two-tier systems create excess labour turnover as they increase the incentives to create temporary rather than permanent jobs, reduce job destruction for stable jobs, but increase churning for temporary jobs. For instance in countries with stringent legal constraints on the termination of permanent jobs, such as France or Spain, it turns out that about 70 per cent to 90 per cent of entries into employment are in temporary jobs with very short duration (on average less than one month and a half in France). If excess labour turnover and its consequences are a concern for the economy as a whole, the dramatic spread of temporary jobs is even more a concern for young/less experienced workers as they are more likely to be negatively affected by the adverse effects of dual employment protection.

The French labour market is no exception and has faced similar trends during the 1990s. Given the pervasiveness of temporary jobs on the labour market and their consequences on the society and economic outcomes, it is urgent to understand how two-tier systems shape the functioning of the labour market. This is the very purpose of the present report.

After having described in details the salient features of the French dual labour market and having discussed the legislation at the root of French dualism, we review the different mechanisms through which dualism affect labour markets: labour market dynamics, wage inequality, human capital accumulation, job satisfaction, social integration and health. We consider whenever possible both theoretical insights and empirical evaluations. We finally conclude this report by providing possible directions to reform the labour market.

Keywords

labour market segmentation, labour market, employment security, wage differential, labour legislation, comment, trend, France

Comments

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2013

**An anatomy of the French labour
market**

Country case study on labour market
segmentation

Thomas Le Barbanchon, Franck Malherbet

Employment
Analysis and
Research Unit

Economic and
Labour Market
Analysis
Department

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Preface

The primary goal of the ILO is to contribute, with member States, to achieve full and productive employment and decent work for all, including women and young people, a goal embedded in the ILO Declaration on Social Justice for a Fair Globalization (2008),¹ and which has now been widely adopted by the international community. The integrated approach to do this was further reaffirmed by the 2010 Resolution concerning employment policies for social justice and a fair globalization.²

In order to support member States and the social partners to reach this goal, the ILO pursues a Decent Work Agenda which comprises four interrelated areas: Respect for fundamental worker's rights and international labour standards, employment promotion, social protection and social dialogue. Explanations and elaborations of this integrated approach and related challenges are contained in a number of key documents: in those explaining the concept of decent work,³ in the Employment Policy Convention, 1964 (No. 122), in the Global Employment Agenda and, as applied to crisis response, in the Global Jobs Pact adopted by the 2009 International Labour Conference in the aftermath of the 2008 global economic crisis.

The Employment Sector is fully engaged in supporting countries placing employment at the centre of their economic and social policies, using these complementary frameworks, and is doing so through a large range of technical support and capacity building activities, policy advisory services and policy research. As part of its research and publications programme, the Employment Sector promotes knowledge-generation around key policy issues and topics conforming to the core elements of the Global Employment Agenda and the Decent Work Agenda. The Sector's publications consist of books, monographs, working papers, employment reports and policy briefs.

The Employment Working Papers series is designed to disseminate the main findings of research initiatives undertaken by the various departments and programmes of the Sector. The working papers are intended to encourage exchange of ideas and to stimulate debate. The views expressed are the responsibility of the author(s) and do not necessarily represent those of the ILO.



José Manuel Salazar-Xirinachs
Executive Director
Employment Sector

¹ See http://www.ilo.org/public/english/bureau/dgo/download/dg_announce_en.pdf.

² See http://www.ilo.org/public/libdoc/ilo/2010/110B09_108_engl.pdf.

³ See the successive Reports of the Director-General to the International Labour Conference: *Decent work* (1999); *Reducing the decent work deficit: A global challenge* (2001); *Working out of poverty* (2003).

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We are grateful to Sandrine Cazes, Olivier Charlot, Mustafa Ulus and to the participants of the ILO Workshop “Employment Quality in Segmented Labour Markets” for helpful comments and suggestions.

Foreword

One of the key features of the labour market developments observed during the past decades throughout the world relates to a phenomenon of labour market segmentation, e.g. the division of the labour market into separate submarkets or segments, distinguished by different characteristics and behavioural rules. To a large extent, these attributes depend on the specific environment in which workers operate. Segmentation may arise from particularities of labour market institutions, such as contractual arrangements (permanent versus temporary employment), their enforcement (and the resulting informality), as well as types of workers concerned (such as migrant, domestic, or dispatch workers).

While the phenomenon is not new, the job crisis has brought an increasing attention to the segmentation/duality issue, especially in Europe. The implications and costs of segmentation are multiple, in both economic and social terms: they include wage gaps between segments, differences in access to training and social security, as well as in working conditions or tenure. Moreover, segmentation implies limited transitions to better jobs. The consequences of segmentation also have macroeconomic implications, such as lower productivity and higher employment volatility.

In this context, and as part of its objective of promoting decent work, the ILO launched, in 2012, a research programme to better understand how labour market institutions affect employment outcomes in both quantitative and qualitative terms. One of the main motivations of the research project is to put job quality at the forefront of the policy debates, informing the main stakeholders in the world of work of the extent of labour market segmentation and its implications for job quality in selected countries. Fourteen country studies on labour market segmentation and job quality were provided by external country experts, as well as thematic papers on job quality in segmented labour markets and the role of labour law, collective bargaining, and improved enforcement. These studies were discussed in a scientific Workshop held at the ILO in December 2012 and used as thematic inputs in a policy-oriented Workshop held at the ILO in April 2013.

The current paper is one in the series of such country studies. It makes an important contribution to the discussion on contractual segmentation of labour markets, providing an overview of the institutional setup as well as empirical evidence on the extent of segmentation and its implications for various aspects of job quality. The paper also offers a policy perspective on the ways to alleviate the negative consequences of segmentation.

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1. Introduction⁴

Over the last decades, many European countries have experienced high and persistent unemployment rates. The bulk of labour market research has tackled this issue by emphasizing the effect of employment protection legislation, hereafter EPL, on labour market performance. As a result, the importance of labour market flexibility has been widely acknowledged. This view can be summarized by the expressed desire of the E.U. council to give member States incentives to “*review and, where appropriate, reform overly restrictive elements in employment legislation that affect labour market dynamics [...] and to undertake other appropriate measures to promote a better balance between work and private life and between flexibility and security*”. It is however striking that most of the reforms undertaken have contrasted sharply with this latter recommendation by favouring reforms *at the margin*.

Those reforms have fostered two-tier systems, as the increase in labour market flexibility has taken place mainly through a series of marginal reforms that liberalized the use of fixed-term and/or non-standard employment contracts. Two-tier systems have promoted the emergence of dual employment protection which can be broadly defined as the coexistence of both long-term contracts, which benefit from stringent protection, and short-term contracts with little or no protection. It is often argued that this combination creates labour market segmentation, traps workers in a recurring sequence of frequent unemployment spells, favours unequal repartition of risk between workers and enhances inequalities. In particular, two-tier systems create excess labour turnover as they increase the incentives to create temporary rather than permanent jobs, reduce job destruction for stable jobs, but increase churning for temporary jobs. For instance in countries with stringent legal constraints on the termination of permanent jobs, such as France or Spain, it turns out that about 70 per cent to 90 per cent of entries into employment are in temporary jobs with very short duration (on average less than one month and a half in France). If excess labour turnover and its consequences are a concern for the economy as a whole, the dramatic spread of temporary jobs is even more a concern for young/less experienced workers as they are more likely to be negatively affected by the adverse effects of dual employment protection.

The French labour market is no exception and has faced similar trends during the 1990s. Given the pervasiveness of temporary jobs on the labour market and their consequences on the society and economic outcomes, it is urgent to understand how two-tier systems shape the functioning of the labour market. This is the very purpose of the present report.

After having described in details the salient features of the French dual labour market and having discussed the legislation at the root of French dualism, we review the different mechanisms through which dualism affect labour markets: labour market dynamics, wage inequality, human capital accumulation, job satisfaction, social integration and health. We consider whenever possible both theoretical insights and empirical evaluations. We finally conclude this report by providing possible directions to reform the labour market.

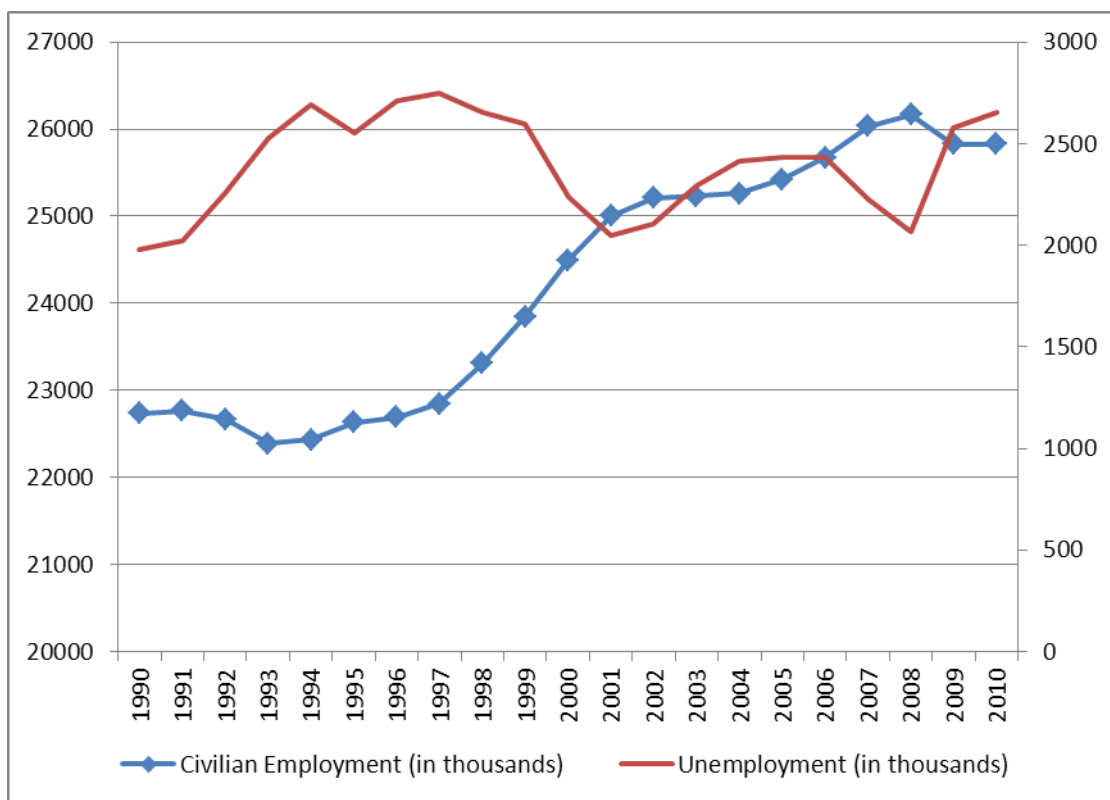
⁴ Thomas Le Barbanchon is a Research Economist at Centre de Recherche en Économie et Statistique (CREST) in Paris.

Franck Malherbet is an Associate Professor at the Université de Rouen and Research Affiliate at the Ecole Polytechnique, IZA, and the Fondazione Debenedetti.

2. An anatomy of the French labour market

Over the last decades, France has experienced high and persistent unemployment. Since the mid-eighties, the number of unemployed has remained over 2 millions (see figure 1 below). In 2010, 2.65 million of workers were unemployed in France. There were almost as many women⁵ as men (49.5 per cent vs. 50.5 per cent), 25.2 per cent of unemployed were young (between 15-24 years old), 58 per cent were between 25 and 49 years old and 16.8 per cent between 50 and 64 years old. At the same time, in 2010, there were 25.8 million workers in civilian employment, out of which 52.5 per cent are men. The proportion of young workers in civilian employment is 8.8 per cent and that of senior workers 25.4 per cent.

Figure 1 Civilian employment and unemployment in France since 1990



Source: OECD

To moderate unemployment, France has conducted labour market reforms introducing flexibility at the margin. Those reforms have led to some employment segmentation between temporary and long-term jobs. This type of segmentation is discussed at length in our study. Other types of segmentation, such as formal/informal employment, are usually perceived as less stringent in the French case. For instance, according to a recent report by the Social Security Agency, 2.4 per cent of French workers are dissimulated.

⁵ The decomposition of unemployment and employment by gender and age is computed by the Insee using the French Labor Force Survey.

2.1. Employment quantity and stability

According to the French Labour Force Survey (LFS),⁶ in 2010, there were in the private sector 15.2 million workers with an open-ended contract (permanent/regular/long term job (LTJ) – “*Contrat à durée indéterminée (CDI)*”) and 2 million with a fixed-term contract (temporary/short term job (STJ) – “*Contrat à durée déterminée (CDD)*”).⁷ This means that the majority of French workers have open-ended contracts, while around 12 per cent of workers in the private sector have fixed-term contracts. According to administrative data, the public sector (ministries, local administration...) represented around 6.3 million workers in 2008 (last updated information by the Insee). The share of temporary jobs in the public sector is 16 per cent. In this report, we restrict to the private sector.

The share of temporary jobs in the private sector is far higher among young workers aged between 15 and 24 years old than among prime-age workers (25-50) and senior workers (over 50): 39.9 per cent vs. 10.7 per cent and 7.0 per cent in 2010. It is also higher for women (15.2 per cent) than for men (9.1 per cent). The share of temporary jobs globally decreases with the level of education when other factors are controlled for (see the linear probability estimation in the appendix). Controlling for age when comparing contracts across different levels of education is very important as temporary jobs have impacted workers entering the labour market since the 90s, and those workers are typically more educated than older generations. The share of temporary jobs is 1.1 point (resp. 1.8 point) lower when workers hold a college degree (resp. a vocational degree) rather than an upper secondary degree. The duality of vocational degree is remarkable as workers with those degrees have the same number of years of education as workers with an upper secondary degree.

Both employment statuses (temporary and permanent) have very different stability properties. Using the 2010 French Labour Force Surveys, we compute the quarterly transition rates between temporary and permanent employment, unemployment and a broader status (including inactivity, public sector and unusual STJ contracts such as temporary help agencies, seasonal work and apprenticeship). Table 1 shows that 96.9 per cent of workers with a LTJ are still employed in a LTJ one quarter later, while this fraction of stayers is 76.6 per cent among workers with a STJ. As expected workers with a LTJ have a more stable position than those with a STJ. In addition, the destinations of workers leaving STJ is much more diverse than the destinations of LTJ leavers. 5.6 per cent of former STJ workers upgrade and become employed into a LTJ and 9 per cent become unemployed. The most common destination of former LTJ workers is the unknown status, representing inactivity (downgrading to STJ contract is very unusual).

In the appendix (tables b-i), we compute the same transition table by age and by education. The tables show that younger workers (15-24 years old) have a higher risk to separate from both a LTJ and a STJ. Their situations are less stable. Yet their upgrading rates from STJ to LTJ are higher. As expected, the unemployment exit rate is lower for unemployed with at most a degree from the lower secondary education. Besides, more educated workers seem to have more stable trajectories (their separation rates are lower from both contracts).

⁶ In this sub section, all statistics are computed from the French LFS. A detailed presentation of the data can be found in the Appendix.

⁷ In this report, we focus on the private sector, adding state-owned merchant firms. Note that we focus on regular STJ and exclude seasonal contracts, contracts with temporary help agencies and contracts for apprenticeship. Those contracts represent respectively 0.1, 0.5 and 0.4 million workers in 2010.

Table 1 Transitions between long term job (LTJ), short term job (STJ), unemployment (U) and other states

Previous State (T-1)	Current State (T)					Total
	0.Other	1.U	2.STJ	3.LTJ		
	%	%	%	%	%	
0.Other	96.8	2.0	0.6	0.6	100.0	
1.U	24.5	62.1	9.3	4.2	100.0	
2.STJ	8.9	9.0	76.6	5.6	100.0	
3.LTJ	1.9	0.9	0.3	96.9	100.0	
Total	63.6	5.0	3.8	27.7	100.0	

Source: LFS 2010. Authors' calculations

The transitions in table 1 reflect changes in labour market states. They do not necessarily capture changes between employers. If workers change employer, but still have the same type of contract, no transition is recorded in table 1. This means that the mean duration of STJ taken from table 1 is greater than the typical mean contract duration.

2.2. Employment security and quality

According to the 2010 European Survey on Working Conditions (ESWC), workers in STJ declare less often that they are satisfied with their working conditions (70 per cent vs. 78 per cent) though the satisfaction gap may appear smaller than expected.⁸ This difference remains significant when controlling for the age, gender and level of education of the workers.

This difference in satisfaction may be related to the difference in earnings between STJ and LTJ workers. Earnings of STJ workers are structurally lower because their probability of unemployment is higher and by nature their employment spells shorter. According to the ESWC, 52 per cent of STJ workers (vs. 41 per cent) declare that they are not well paid for their work.

This difference in job satisfaction may also be caused by the fact that STJ workers often move from job to job or to unemployment. STJ workers often declare in the ESWC that they “might lose their job in the next 6 months” (41 per cent vs. 7 per cent of LTJ workers). The lack of job security prevents STJ workers from building their career. 21 per cent (vs. 34 per cent of LTJ workers) declare that they have “good prospects for career advancement”. The mobility of STJ workers prevents them from developing their social network in their workplace. 57 per cent of STJ workers (vs. 72 per cent of LTJ workers) declare that they “have good friends at work”. All these dimensions may contribute to the lower level of job satisfaction of STJ workers.

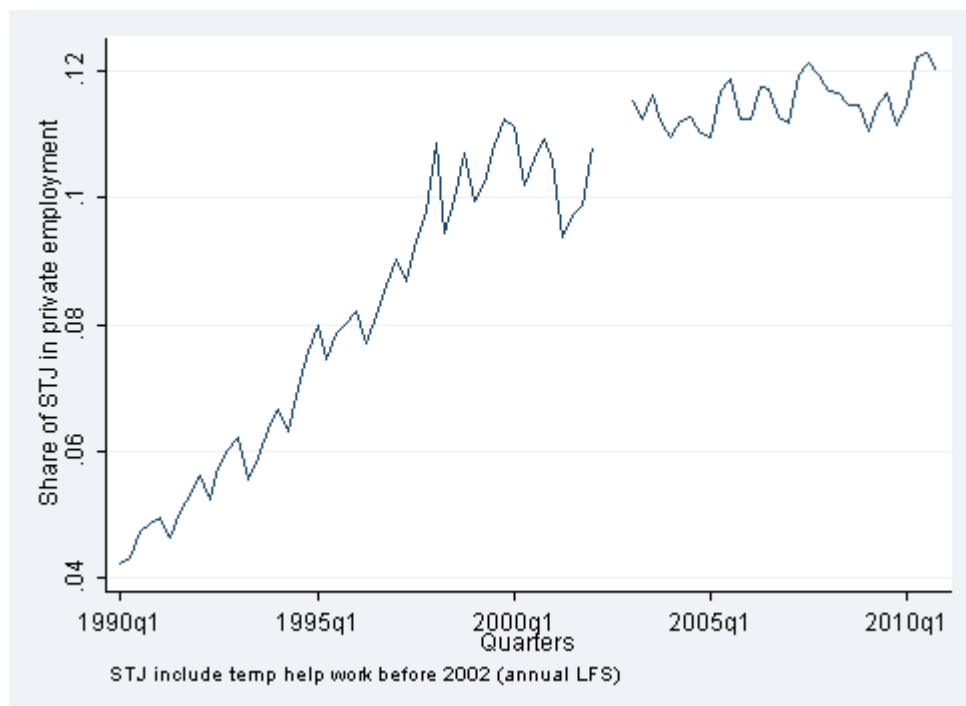
⁸ This point is discussed in Section 5.1.

In addition firms invest less in STJ workers. Although STJ workers feel more often than LTJ workers that they would need further training to cope well with their duties (14 per cent vs. 8 per cent), firms pay less on STJ workers' trainings: 14 per cent of STJ workers (vs. 29 per cent) declare that they have done a "training paid for or provided by their employer" over the past 12 months. Again those differences remain significant when controlling for the age, gender and level of education of the workers. To compensate for this lack of firms' investment, STJ workers more often learn through co-workers and supervisors (31 per cent vs. 26 per cent) or pay directly further training (6 per cent vs. 2 per cent).

2.3. Trends in stocks and flows

During the 90s, there was a steady increase in the share of STJ. Then the importance of STJ has been quite stable since 1999. Similar trends are found in the public sector (see Fabre 2006). Figure 2 shows that the share of STJ has increased from 5 per cent in 1990 to 11 per cent in the late 90s. This increase cannot be linked to major reforms of the law on STJ in the 90s (though it could be the long term effect of the 80s reforms). If anything, the Law made STJ more stringent in 1990 (see the relevant section below). It could be linked to the evolution of the relative stringency of EPL between STJ and LTJ, both due to the legislation and case law.

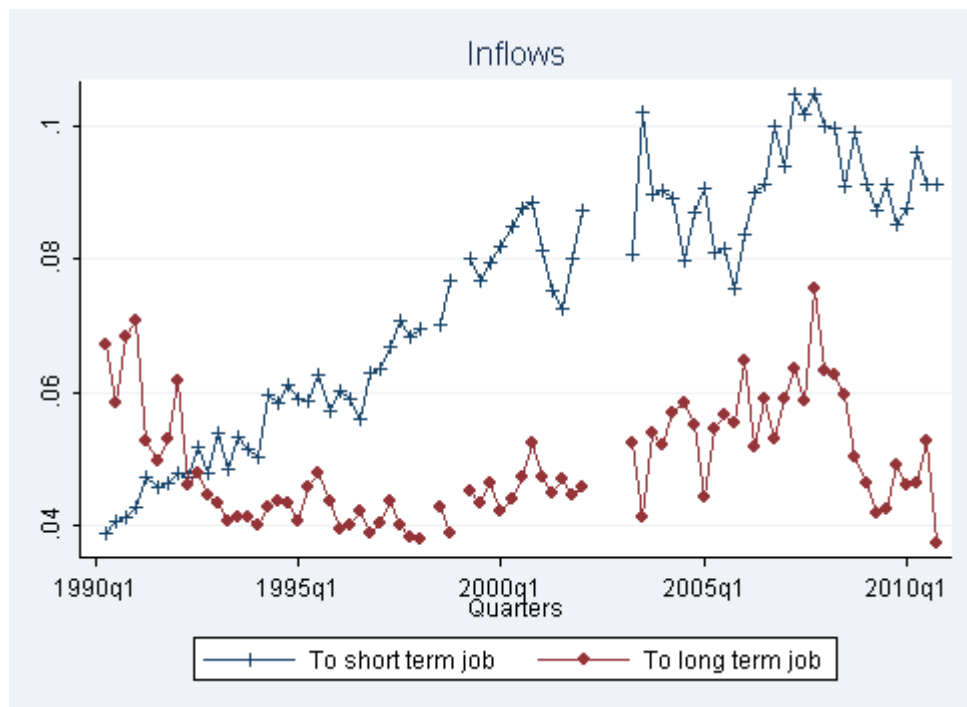
Figure 2 The share of STJ in the French private sector



Source: LFS. Authors' calculations

The increase in the aggregate stock of STJ workers can be explained by the increase in the share of STJ in total inflows from unemployment to employment over the period, while the difference in the probability to enter unemployment from STJ and LTJ and the upgrading probability from STJ to LTJ stayed constant over the period (figures 3, 4 and 5). It is expected that the discrepancy in outflows probability remains constant over the period because this difference is structural and reflects the EPL gap between the two types of contracts (figure 4). The fact that the upgrading probability does not evolve over the period is less expected (figure 5). For example, changes in the firms' need for screening workers (one of the purposes of STJ) could have pushed upward or downward the upgrading probability.

Figure 3 Transition rates from unemployment to employment by contracts type



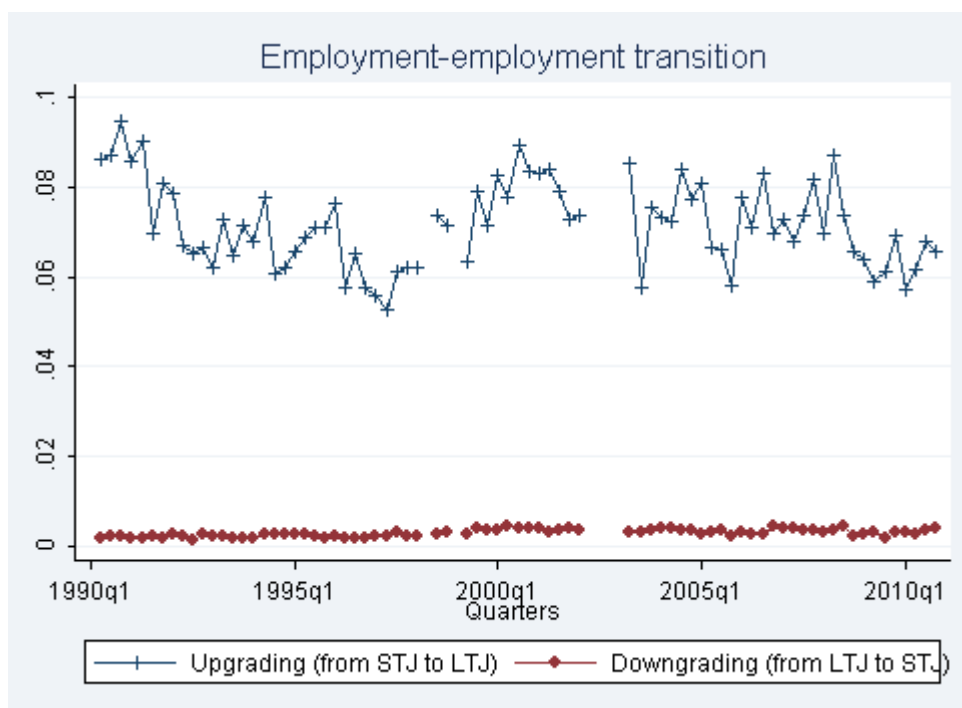
Source: LFS. Authors' calculations

Figure 4 Transition rates from employment to unemployment by contracts type



Source: LFS. Authors' calculations

Figure 5 Employment-employment transition



Source: LFS. Authors' calculations

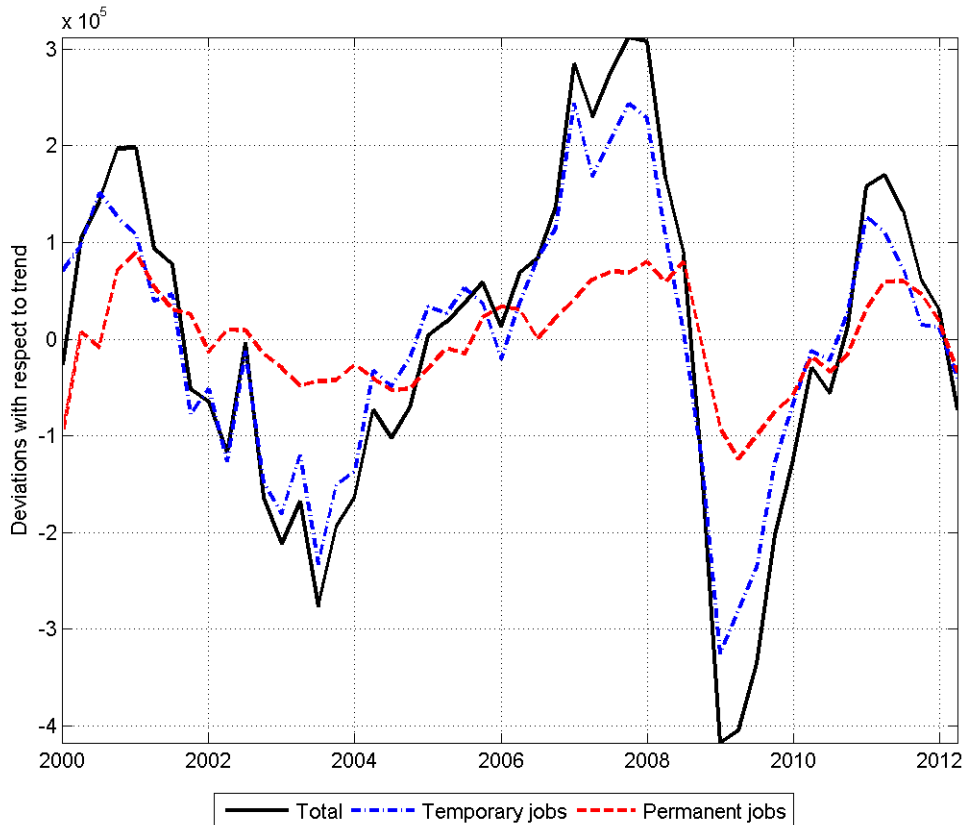
Alternatively, the increase in the share of STJ can be explained by the progressive replacement of senior LTJ workers by young workers starting their careers with STJ (see figure a in the appendix).

Note that, while STJ still represent a minority of the employment stock in 2010, these trends have led to the prevalence of STJ flows in total flows. The share of STJ in total inflows from unemployment to employment is around 69 per cent in 2010. The share of workers formerly with STJ in total outflows from employment to unemployment is around 58 per cent in 2010.

2.4. Dualism in turbulent times

Figure 6 below illustrates how the French labour market has recently coped with the crisis. It is straightforward to remark that the main part of fluctuations in employment inflows is due to inflows into temporary jobs.

Figure 6 Number of inflows into employment per quarter (in thousands) in the private non agricultural sector. Deviations with respect to trend from quarterly (HP filtered) data over the period 2000q1 to 2012q2.

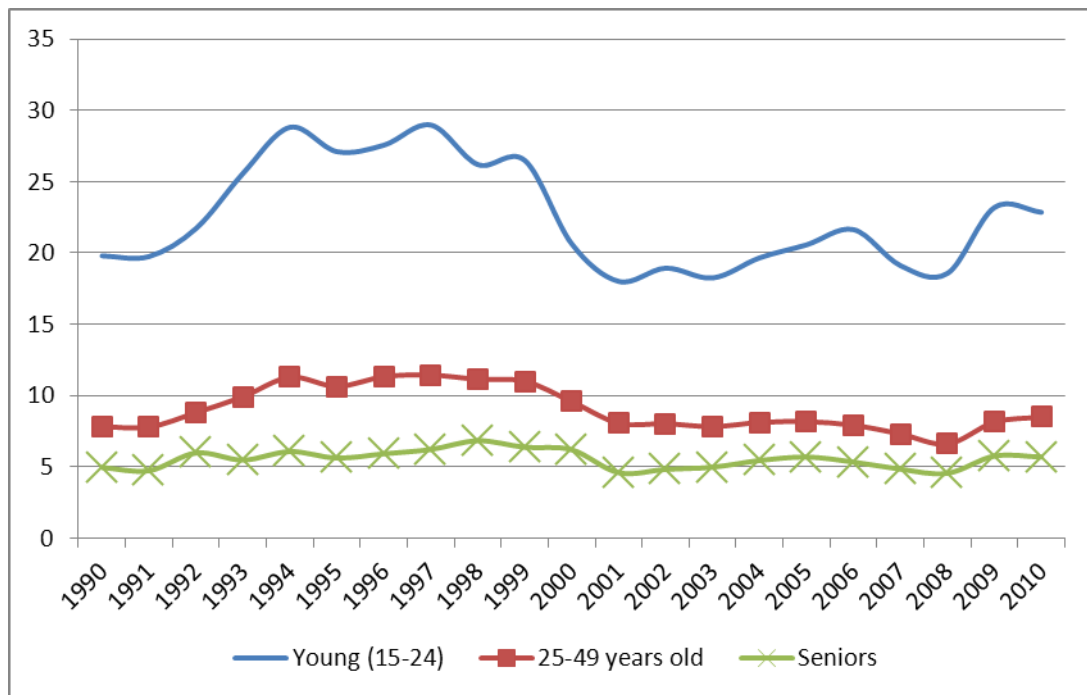


Sources: ACOSS-DUE and DARES and authors' calculations

In France over the period 2000q1-2012q2, changes in total employment inflow are mainly driven by temporary jobs. The average deviation between the number of entries and its trend is seven times larger for temporary jobs than for permanent jobs. In particular, one may observe that at the beginning of the recession that started in 2008, there is a strong drop of entries into temporary jobs, much larger than the drop of entries in permanent jobs.

As the previous figure shows, an overwhelming majority of the adjustment in the inflows into employment transits through temporary jobs. This fact raises an inescapable question: who bears the cost of the business cycle? We have already shown that temporary jobs are much more a concern for the young workers. Hence in a segmented labour market, it might be expected that employment adjustment is more drastic among the youths than among the prime-age workers. Accordingly, the unemployment rate is likely to be more volatile for young people. Figure 7 below plots the unemployment rate for different age groups over the period 1990-2010 in France.

Figure 7 Unemployment rates by age in France



Source: OECD.

As expected, it appears that the unemployment rate for the youths aged between 15 and 24 is much more volatile than the unemployment rate for the prime-age and senior workers. This is confirmed by a recent study by Kawaguchi and Murao (2012). The authors show that there is a considerable heterogeneity in the volatility of age-specific unemployment rates across OECD countries. A core result of their study is that stricter EPL amplifies the effect of the cyclical unemployment rate on youths' unemployment rate. Put differently, the burden of labour market adjustments is disproportionately shifted onto the shoulder of the youths in countries with stricter EPL.

In the view of the forgoing analysis, it is irrefutable that the crisis has shown the limits of reforms at the margin. Another area of concern is hence linked to the reforms that may be implemented in the midst of a crisis. In this respect active labour market policies may be of valuable help especially for young people as it has been recently put to the fore by a number of authors (see e.g. Forslund, Fredriksson and Vikström, 2011, Andersen and Svarer, 2012).

3. Institutional background

3.1. General principles

The general principle governing labour relations is described in the article L. 1221-2 of the French labour code which stipulates that the *normal* and *general* labour contract between a firm and a worker is the permanent or open-ended contract⁹ (CDI). From this standpoint, all other contracts may therefore be seen as atypical or non-conventional.

Among these atypical contracts, the most common type of contract is the fixed-duration/short term contract (CDD) that roughly accounts for 12 per cent of total employment.

First introduced in 1979, this type of contract is tightly regulated by the French labour code (see articles L. 1241-1 to L. 1248-11) and is primarily intended to be used in particular cases (see below). The legislation associated with this type of contract is complex and somehow deliberately deterrent.

In its actual form the recourse to CDD is framed by the reform undertaken in 1990 (N. 90-613 – July 1990) that has restricted the use of temporary contracts. A few exceptions have been however introduced since then. As a general principle, at least in the spirit of the law, the recourse to CDD should remain exceptional. The article L. 1242-2 specifies the reasons for use of temporary contracts. They can be offered in the following cases:

- Replacement of a worker who is absent whatever the reason (e.g. sick leave, maternity leave, vacations, on leave...). It is however strictly forbidden to hire a worker on STJ to replace a worker on strike, to perform hazardous work or to fill a position that has been made redundant for less than six months.
- Temporary increase in the activity of the firm (e.g. to serve an export market, to achieve some urgent tasks...).
- Activities that are by nature seasonal (e.g. Christmas sales, tourism...).

The general principles governing the CDD specify that the contract can be renewed two times at most and that the maximum cumulative duration of successive contracts should not exceed 18 months.¹⁰ In most cases, the CDD opens right to severance payments. Beyond the general rules, noticeable exceptions are worth mentioning here.

First, the recourse to temporary contracts can be more flexible for some jobs in some particular sectors where the contract is said to be customary. In this case, the contract is said to be a “*Contrat d’usage*” and is by nature temporary due to the fact that it is customary not to hire people on permanent contract for the task to be accomplished (e.g.

⁹ The article L. 1221-2 of the French labour code stipulates that « *La forme normale et générale de la relation de travail est le contrat à durée indéterminée* ».

¹⁰ 9 months if it concerns an urgent task to be undertaken, 24 months if it concerns an exceptional export order or if the contract is executed abroad. In some cases (e.g. replacement of a worker on extended sick leave), the length of the temporary contract can be undetermined. In this case the contract must specify a minimum duration.

moving or polls).¹¹ This type of contract may be renewed at will and does not qualify for severance payments.

Second, particular dispositions have been introduced for the workers aged 57+ (“CDD senior”) in 2006. This contract is conceived to ease the reintegration into work of the older workers. The maximal duration of the contract is 18 months. It can be renewed only one time and the cumulative duration of the contract cannot exceed 36 months.

Finally, following the modernization act of the labour market¹² in 2008, a special type of contract (“*CDD à objet défini*”) has been introduced. This type of contract is mostly intended for white collar/skilled workers and specifies a particular task/assignment to be accomplished. The minimal duration of the contract is 18 months and the maximal duration cannot exceed 36 months. This type of contract cannot be renewed.

3.2. The French Employment protection legislation

3.2.1. A brief overview

According to the OECD indicators, the employment protection legislation (EPL) in France is particularly stringent. On a scale from 0 (least restrictions) to 6 (most restrictions), the overall EPL indicator for France in 2008 is worth 3.05 whereas the average for OECD countries is equal to 1.94. This indicator can be examined in more detail by separating permanent and temporary contracts. For the same time period, EPL indexes are worth 3¹³ and 4¹⁴ for permanent and temporary contracts respectively whereas the OECD averages are 2.11 for the former and 1.77 for the latter.

Most European continental countries have some stringent procedural requirements for dismissals. In France, as a general principle, dismissals must be justified by a serious and genuine cause (“*cause réelle et sérieuse*”, see articles L. 1232-1 and L. 1233-2 from the French labour code). Since the introduction of this requirement in 1973 and following the continuous surge in unemployment, the legislation and the case law have steadily strengthened the control, and restricted the possibility to dismiss workers for economic reasons. Despite the fact that individual dismissals for economic reasons do not require outside approval or notification, this procedure carries a lot of uncertainty. The Gordian knot stems from a restrictive definition of the serious and genuine cause whose formulation

¹¹ An exhaustive list of the sectors concerned with this type of contract is given by the decree D. 1242-1 of the French labor code. This type of contract may be used in the following main sectors: forestry, naval repair, moving, hospitality, spectacle, cultural activities, audiovisual, edition, movie industry, teaching, polls, music publishing, leisure centres and holiday camps, storage of meat, professional sport, construction work conducted abroad, cooperation and engineering and technical assistance and research conducted abroad.

¹² « *Loi portant modernisation du marché du travail* » from the Fillon (right-wing) government.

¹³ This score approximates the difficulty of dismissal for permanent contracts and is a weighted average of several sub-indicators, including the definition of justified or unfair dismissal, length of trial period, compensation following unfair dismissal and possibility of reinstatement following unfair dismissal. See: www.oecd.org/employment/protection

¹⁴ This score approximates the stringency of the legislation for temporary contracts and is a weighted average of several sub-indicators, including the valid cases for use of fixed-term contracts, maximum number of successive fixed-term contracts and maximum cumulated duration of successive fixed-term contracts. See: www.oecd.org/employment/protection

is fuzzy and likely to initiate long and costly judicial proceedings.¹⁵ Quoting Cahuc (2012) : “French judges have developed jurisprudence that forbids companies from firing employees to improve their competitiveness; they can only fire employees to safeguard their competitiveness. Nevertheless, the notion of economic dismissal – based on this distinction between safeguarding competitiveness (considered by jurisprudence as a real and serious cause of dismissal) and improving competitiveness (not considered as a valid motive for dismissal) – is particularly difficult to interpret.”¹⁶ In case of a collective dismissal¹⁷ procedural requirements are more complex and require for instance written notification to public administration¹⁸ as well as its advisory opinion. On top of that, it is of the firms’ responsibility to put in place redeployment measures for the workers that have been laid-off.

3.2.2. Enforcement

As we have seen, France is among the countries where EPL is the most stringent. A side effect of this stringency is to produce a large amount of legal procedures related to labour disputes. The number of legal procedures has increased dramatically since the mid-95 (Dares, 2006). Those disputes are mainly brought to the “*prud’hommes*” which is the relevant jurisdiction to solve labour conflicts.¹⁹ On average, about 90 per cent of the cases brought to the court are related to the termination of a temporary or an open-ended contract (Dares, 2006), and about 25 per cent of dismissed workers disputes the legitimacy of their layoffs each year (Fraisie, Kramarz, Prost, 2011). The legal procedure is costly, complex and time-consuming. For instance, in 2011 the average duration to solve a case was of about 11 months and the court rules in favor of the workers in most cases (the rate is close from 75 per cent, see Fraisie et al. 2011).

Using data from the public employment service (PES) over the period 1995-2012, figure 8 represents the flows of entries into unemployment for workers with permanent – open ended- contracts.

¹⁵ See Cahuc and Carcillo (2007) for more details.

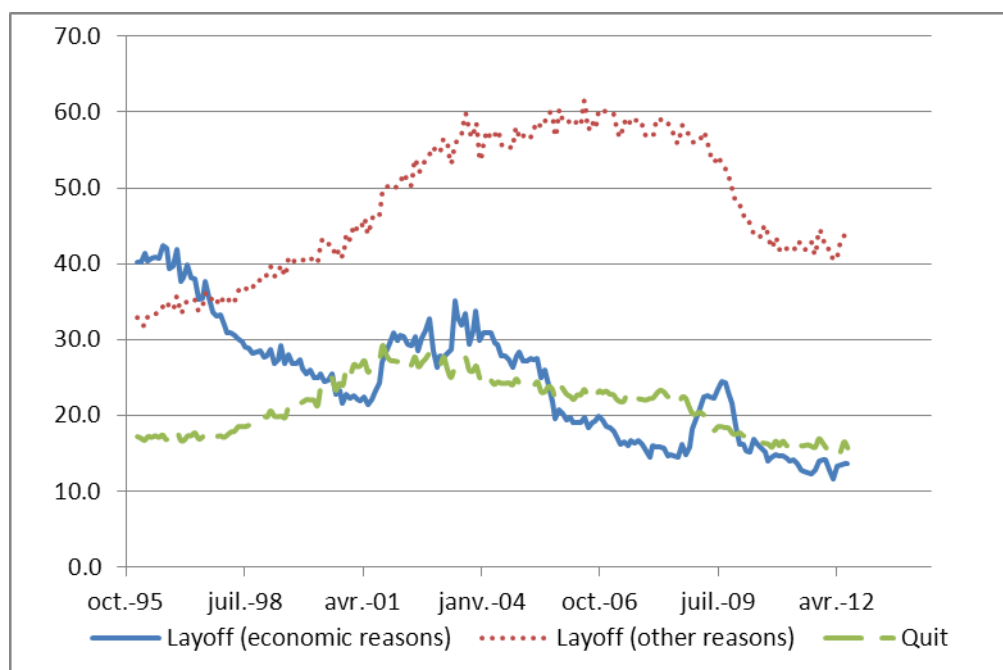
¹⁶ See e.g. Cahuc and Kramarz (2004), Cahuc and Carcillo (2007) or Ray (2012) for further details on the French jurisprudence related to economic dismissals.

¹⁷ The French labour code distinguishes two collective dismissal procedures: In the first case, firms that fire 10 or more employees over a 30-day period are concerned; In the second case, firms that fire less than 10 employees over a 30-day period are concerned.

¹⁸ Notification must be provided to DDTE (“*Direction Départementale du Travail et de l’Emploi*”). See e.g. Cahuc and Carcillo (2007) for further details.

¹⁹ In 2011, 205321 cases have been solved by the 210 labour courts (“*conseils des prud’hommes*”) spread all over the French territory. For further details see: http://www.justice.gouv.fr/art_pix/chiffres_cles_2012_20121108.pdf

Figure 8 Number of entries into registered unemployment (thousands per month)



Source: Pôle-Emploi

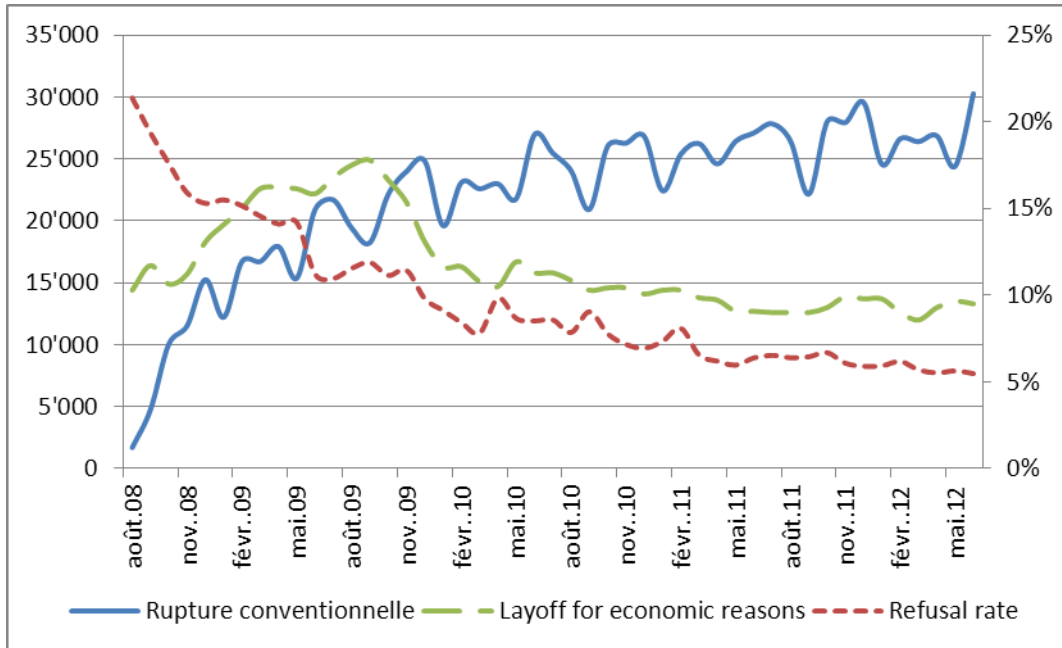
It appears that over the period, the number of monthly layoffs for economic reasons have steadily decreased from about 40,000 in 1995 to 13,500 in 2012 whereas layoffs for other reasons have expanded by about 50 per cent and quits have remained remarkably stable.

These figures suggest that firms circumvent the law to avoid the complexity and the uncertainty associated with the current dismissal requirements. Note also that the downward trend observed since 2008 is concomitant with the introduction of a new dismissal modality.

As a matter of fact, a new dismissal modality has been introduced in 2008. The separation between the firm and the worker is made by mutual consent (“*rupture conventionnelle*”)²⁰ and this introduction has helped to obscure the contours of the French employment protection legislation. As can be seen on figure 9, this modality has increased substantially in scale during the recent period and greatly exceeds layoffs for economic reasons. It is also remarkable that the administrative refusal rate has steadily decreased to reach a low 5 per cent by the end of 2012. From this point of view, it seems likely that the “*rupture conventionnelle*” has provided incentives to the firms and to the workers to circumvent the burden of the legislation.

²⁰ See the Appendix for a detailed description of this new modality.

Figure 9 Monthly number of separations by mutual consent (“Rupture conventionnelle”) and layoff for economic reasons (left axis), and refusal rate (right axis)



Source: DARES

Hence, it appears that there is a misuse of legislation on common dismissal procedures for permanent contracts. To complete this less than flattering portrayal of the legislation, it must be mentioned that the introduction of numerous exceptions²¹ on the use of temporary contracts has considerably weakened their regulations and has created more favourable conditions for abuse.

The increasing involvement of the judicial system and its propensity to second guess firms' layoff decisions have been criticized by a number of authors (See e.g. Blanchard and Tirole, 2003, Cahuc and Kramarz, 2005 or Cahuc and Carcillo, 2007). In addition, it has been pointed out that workers with permanent contracts may only be superficially protected, as indicated by the very few fair or justified dismissals in job destruction flows (Boeri, Bertola and Cazes, 2002, Cahuc and Kramarz, 2005, Cahuc and Carcillo, 2007).

²¹ See Section 4.1. for an overview.

3.2.3. Summary characteristics of the legislation

We provide below for the two types of contracts the main characteristics of the legislation. A more detailed description can be found in the ILO Employment protection legislation data base (EPLex).²²

Table 2 Legislation governing permanent contracts (CDI) and individual dismissals

	Trial period	Dismissal (economic reasons)	Notice period	Severance pay
<i>Perm. Contracts</i>	Max 8 months. The trial period is renewable once if this is stipulated in the labour contract. The period is skill dependent ranging from 2 months for blue collar workers to 4 months for white collar workers (art. L. 1221-19).	Dismissal for economic reasons can occur at any time provided that the reason is serious and genuine (art. L. 1232-1) and that the worker has received a written formal notification (art. L. 1232-6).	Min 2 months if the tenure is greater or equal to 2 years, 1 month otherwise (art. L. 1234-1).	A worker is eligible to a severance pay after tenure of at least 1 year (art. L. 1234-9). The statutory minimum is 1/5 of monthly wage per year of seniority. A premium of 2/15 of monthly wage is added for all years of seniority beyond 10 years. ²³

Table 3 Legislation governing temporary contracts (CDD)

	Trial period	Dismissal	Severance pay
<i>Temp. contracts</i>	Max 1 month if the contract exceeds 6 months, 15 days otherwise. The trial period is renewable once (art. L. 1242-10).	Dismissal for economic reason cannot occur before the expiration date of the contract (art. L. 1243-1).	A worker is eligible to a severance pay (“prime de précarité”) at the expiration of the contract when the contract is not renewed or transformed into a permanent contract (art. L. 1243-8). The statutory minimum is 10% of the gross wage over the entire duration of the contract.

Temporary contracts are often perceived as dramatically flexible. However, an important feature of EPL is often neglected both in policy oriented reports and in the academic literature.²⁴ In most countries, it is extremely difficult to dismiss temporary

²² See <http://www.ilo.org/dyn/terminate/termmain>. For an exhaustive presentation, see the French labour code available at <http://www.legifrance.gouv.fr>.

²³ For instance, for a worker with a tenure of 15 years, the minimum severance pay amounts to $(1/5*15) + (2/15*5) = 3.67$ months of wages.

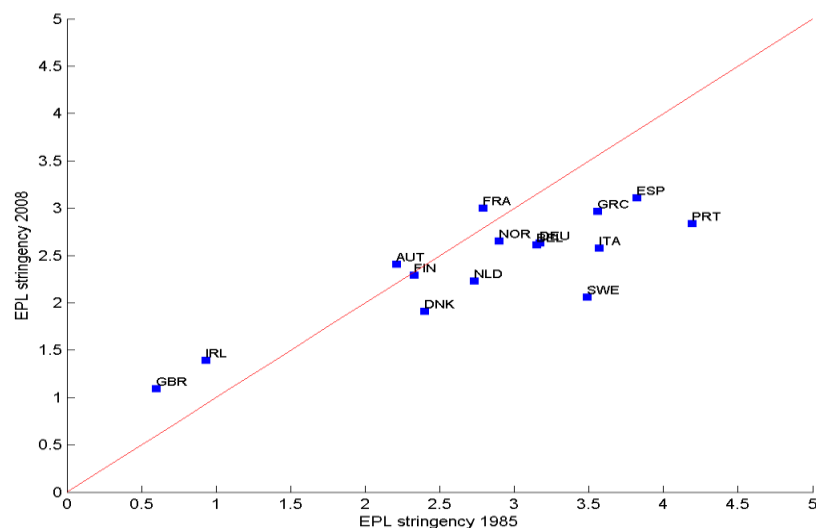
²⁴ Noteworthy exceptions in the literature are Bentolila, Cahuc, Dolado and Le Barbanchon (2012), Cahuc, Charlot and Malherbet (2012), and Charlot and Malherbet (2012). The model developed in Appendix will explicitly take account of this feature.

workers before the date of termination of the contract stipulated when the job starts. For instance in France, the article L. 1243-1 of the labour code stipulates that temporary contracts cannot be terminated before their expiration date. There are exceptions to this general rule. Employers can only dismiss fixed-term workers if there is a credible valid reason which makes the continuation of employment unacceptable (e.g. misbehaviour of the worker). In addition an employee can quit if he finds an open-ended contract.

3.3. Institutional trends over the period 1990-2008

As emphasized by Boeri (2011), European labour market institutions have been subject to much activism over the last 20 years. As regards employment protection, figure 10 below shows that, over the period 1985-2008, a majority of countries has changed their employment protection strictness. At first sight, it may appear that French institutions have been subject to less activism than other countries as can be inferred from the relative position of the country from the 45 degree line. A thorough analysis shows however that France is no exception (see table 4 below).

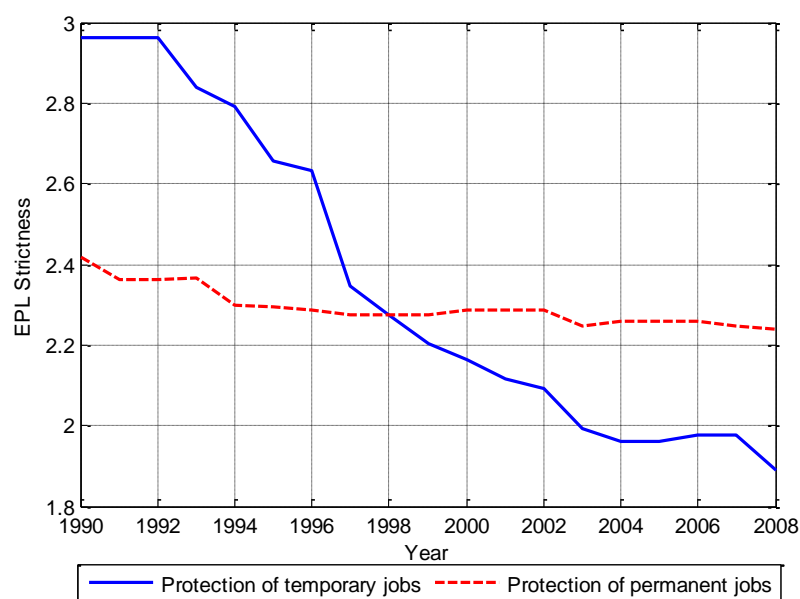
Figure 10 The evolution of EPL strictness over the period 1985-2008. Countries below the 45 degree line are those that have experienced a decrease in EPL stringency



Source: OECD (2008)

Nevertheless, this activism is particular to the extent that it has made labour market more flexible at the margin by facilitating the recourse to temporary jobs without actually changing the protection of permanent jobs. Figure 11 below illustrates this fact. It represents the evolution of the average EPL strictness over the period 1990-2008 computed as the average of the OECD EPL indicators for permanent and temporary jobs in European countries.

Figure 11 Evolution of the average EPL strictness for permanent and temporary jobs in European countries



Source: OECD (2008)

It can be remarked that over that period of time, the protection of permanent jobs has remained almost stable whereas the protection of temporary jobs has been sharply reduced, falling from 2.96 in 1990 to 1.89 in 2008.

As in many European countries, a vast majority of the reforms undertaken in France since the 1990's have fostered two-tier systems. Precisely, the reform of labour market institutions has taken place mainly through a series of marginal reforms that liberalized the use of fixed-term and/or non-standard employment contracts.

The table below presents the main reforms for EPL in France for both permanent and temporary contracts.²⁵ The methodology follows closely Boeri (2011). A positive sign in the column flexibility indicates that the reform has increased labour market flexibility whereas a negative sign indicates the reverse.

²⁵ Table is built using the SRDB-IZA Social Reforms Database for the period 1990-2007 available at <http://www.frd.org/> and information available at <http://www.legifrance.gouv.fr/> for the period 2008-2012.

Table 4 Main institutional changes over the period 1990-2012

Law/Bill	Date	Topics	Flexibility
90-613	12-july-1990	Restore the exhaustive list of situations when the use of temporary contracts is authorized.	(-)
92-722	29-july-1992	Individual dismissals - Procedural obligations for permanent contracts are strengthened.	(-)
2002-73 ²⁶	17-january-2002	Increase restrictions on the use of temporary contracts and increase regulations on collective redundancies.	(-)
2003-6	3-january-2003	The new law suspended nine redundancy-related articles of the previous law introduced in 2002.	(+)
2005-843	26-July-2005	Increase restrictions on the use of temporary contracts in the public sector.	(-)
2005-893	26-July-2005	Introduction of new type of contracts (“Contrat Nouvel Embauche - CNE”) for the firms with less than 20 workers.	(+)
2006-1070	28-August-2006	Introduction of a new type of temporary contracts for the workers aged 57+ (“CDD Senior”) (see above). Gradual removal of the “Delalande contribution”, a kind of experience-rated layoff tax for workers aged 50+.	(+)
2008-596 ²⁷	25-June-2008	Introduction of a new type of temporary contracts for white collar/skilled workers (“Contrat à objet défini”). Abrogation of the CNE introduced in 2005. Introduction of a new dismissal modality by mutual consent for open-ended contracts (“Rupture conventionnelle”).	(+)/(-)

Temporary contracts have been first introduced on the French labour market in 1979 (L. 79-11 – January 1979). Since then a considerable number of reforms have been undertaken mostly focused on temporary employment, i.e. the so called flexibility at the margin, favouring the status quo for workers employed on permanent –open-ended- contracts. From this perspective, the French labour market has been subject to a considerable activism. The Table 4 above does not convey a clear-cut message on how the main institutional changes have shaped labour market segmentation. However a finer-grained analysis that encompasses the case law as well as the enforcement of the law indicates that the EPL differential between permanent and temporary contracts has increased. As a consequence, the spread of temporary jobs has been fostered since the beginning of the 90s (see figure 2).

²⁶ « *Loi de modernisation sociale* » from the Jospin (left-wing) government.

²⁷ « *Loi portant modernisation du marché du travail* » from the Fillon (right-wing) government.

4. What do we know (or not) on the effects of two-tier systems on labour market outcomes?

In this section, we investigate the effects of labour market dualism on labour market outcomes with a particular emphasis on the quality of jobs. For this purpose, we proceed as follows. First, we develop a search and matching model in the spirit of Mortensen and Pissarides (1994) that borrows from the recent works by Bentolila et al. (2012), Cahuc et al. (2012) and Charlot and Malherbet (2013). The main objective here is to illustrate how changes in policies affect various labour market outcomes. An originality of our approach is to account for an important feature of EPL which have been neglected so far, *i.e.* the fact that temporary contracts cannot be terminated before their expiration date. For editorial convenience, the main characteristics of the model are briefly presented in the summary box below. Technical and calibration details are reported in the appendix. Second, we complement the analysis with the most recent advances in the theoretical and empirical literature dealing with labour market segmentation.

A search and matching model of a segmented labour market

The search and matching model developed borrows from Bentolila et al. (2012), Cahuc et al. (2012), and Charlot and Malherbet (2013). The model incorporates the main characteristics of the French labor market. A summary of relevant technical details is reported in the appendix and we refer the interested reader to the above mentioned articles.

There are matching frictions on the labour market. The key insight is that bilateral matching is an uncoordinated and time consuming activity that is costly for both firms and workers.

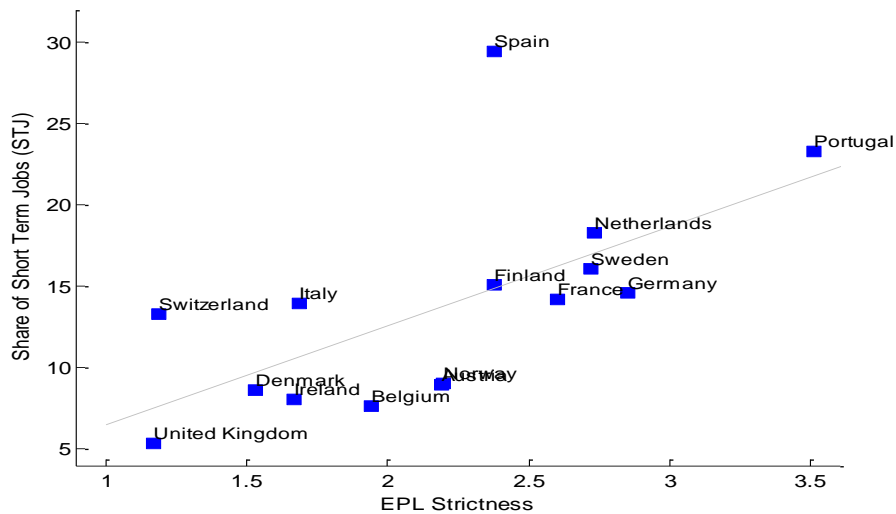
There are two types of contracts: temporary and permanent. Permanent contracts are the regular type of contracts and do not stipulate any pre-determined duration. They are protected by dismissal costs paid by firms. These costs are not transferable to the workers and therefore consist in red-tape and legal costs rather than severance payments. Temporary contracts stipulate a fixed duration and are not renewable. An originality of our approach is to account for an important institutional feature which has been neglected by the literature so far: temporary contract cannot be terminated before their expiration date. At their date of termination, temporary jobs can be either destroyed at zero cost or transformed into permanent jobs. Trying to mimic realistic wage bargaining procedures, we assume that wage in permanent jobs are renegotiated by mutual agreement whereas they are fixed in temporary jobs until the jobs expire. Workers are equally productive in both contracts (*ex ante*).

Results presented in the core of the text originate from simulation exercises. The main objective here is qualitative rather than quantitative though the order of magnitude is relevant for the French labour market. We use exogenous variation in policy parameters (e.g. EPL strictness on open-ended contract, easiness to create temporary jobs) to illustrate various labour market outcomes.

4.1. Labour market dynamics

The extensive recourse to short term jobs (STJ) is a striking feature of labour markets with stringent employment protection. In OECD countries, this type of contract accounts for 10 to 30 per cent of total employment (stock) and for a substantial proportion of new hires (flows) reaching up to 90 per cent in countries like Spain. As the scatter plot below illustrates, the share of STJ is positively correlated with the strictness of employment protection. However and as it has been advocated by a number of authors (see e.g. Bentolila et al., 2012), it is first and foremost the EPL gap between the two types of contracts that drives the share of STJ. It is therefore particularly important to decompose the EPL index into STJ and LTJ when comparing countries with high overall EPL, such as France and Spain (see Bentolila et al. 2012).

Figure 12 The relation between the share of STJ and EPL strictness (permanent employment)

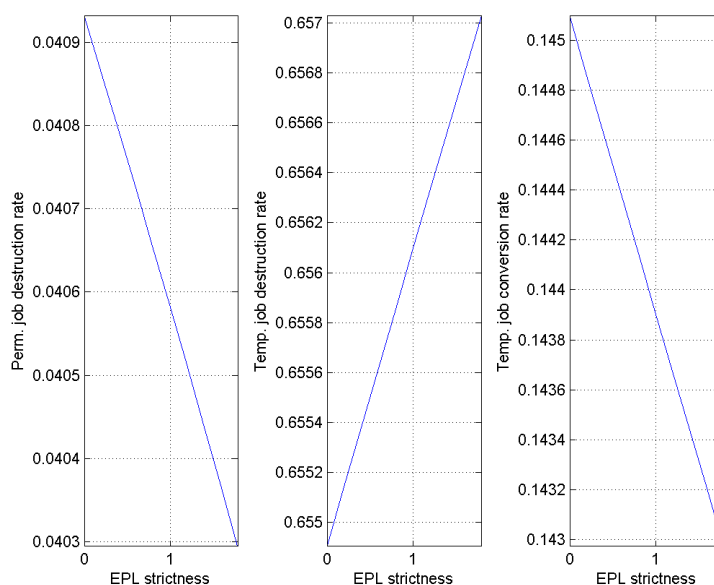


Source: OECD (2008)

Plausible explanation for this result stems from the facts that EPL makes firm more reluctant to hire worker on open-ended contracts and more demanding to convert STJ into long term jobs (LTJ). It has long been recognized by the literature that two-tier systems affect labour market dynamics. As a matter of fact, fostering the creation of STJ promotes job creation but also increases jobs destruction, leading to an ambiguous effect on unemployment.

Making use of the model developed in the appendix, the graph below shows how EPL shapes labour market dynamics in a two-tier country like France when we vary the EPL for permanent jobs. In our model, this is equivalent to a change in the EPL gap between permanent and temporary jobs.

Figure 13 Effects of a rise in EPL strictness for permanent jobs on labour market dynamics



EPL strictness on LTJ fosters labour hoarding for permanent jobs meaning that the average employment spell on open-ended contracts increases. A key implication of the model is that the transformation rate of temporary jobs into permanent jobs decreases with the strictness of EPL. As a corollary, churning for temporary jobs intensifies with EPL. These results are confirmed by the empirical literature (see OECD 2002 or Boeri 2011). It has been shown for instance that a non-negligible fraction of temporary jobs can be transformed into permanent jobs in some countries with low EPL such as the UK, where the transformation rate is about 50 percent, while it is much lower in countries with more stringent EPL such as France, where the same rate is below 15 percent.

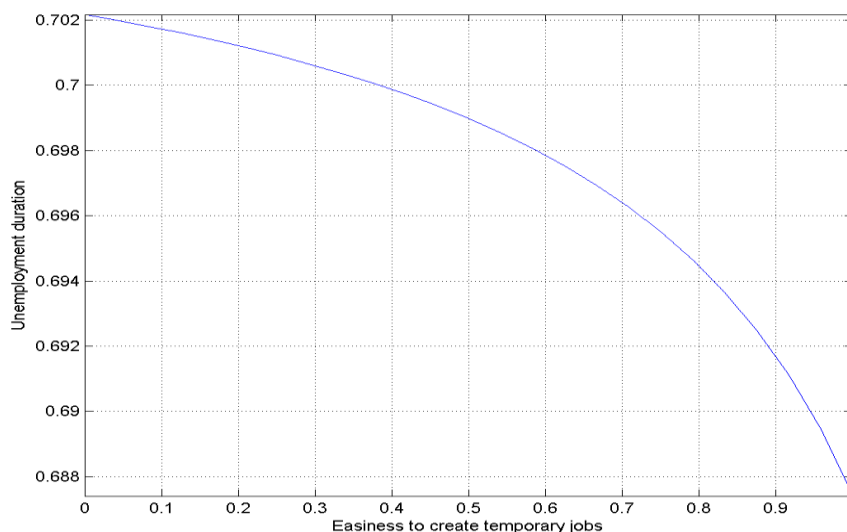
Two-tier systems affect the level and the composition of labour market flows and generate excess of labour turnover. For instance, Cahuc et al. (2012) show that an increase in EPL strictness induces a strong excess of labour turnover, which is detrimental to temporary workers whose expected job duration becomes shorter. However it has a very limited impact on aggregate employment. This limited impact stems from two counteracting effects, a strong decrease in the number of permanent jobs and a strong increase in the number of temporary jobs. This results in large reallocation effects suggesting a large substitutability between the two types of contracts.²⁸

To some extent dual labour markets may be beneficial to unemployed workers. First, temporary jobs may be seen as a port of entry into employment and therefore may act as “stepping-stones” to permanent employment. Second, by fostering job creations, they are likely to shorten unemployment duration.

Making use of the model developed in the appendix, the graph below depicts how an increase in the flexibility at the margin (-- the easiness with which temporary jobs are created --) affects unemployment duration.

²⁸ See among others Booth et al. (2002), Centeno and Novo (2012), and Cappellari, Dell’Ariaga and Leonardi (2012).

Figure 14 Effects of the easiness to create temporary jobs on the duration of unemployment



It follows that a more flexible regulation on temporary jobs increases the frequency with which job-worker matches are terminated and decreases unemployment duration. Similar results are found in e.g. Cahuc and Postel-Vinay (2002) and are confirmed in recent empirical studies (see e.g. Graaf-Zijl, van den Berg and Heyma, 2011). The magnitude of the effect is however questioned. In the particular case of France, Blanchard and Landier (2002) conclude using French LFS over the period 1983-2000, that labour market reforms have strongly increased labour turnover without a substantial reduction in unemployment duration.

Another recurring issue which has been raised with dual labour markets is to know whether temporary jobs act as stepping-stones or as dead-ends following the terminology introduced by Booth et al. (2002). There are now many studies that assess the occurrence of these two phenomena using longitudinal data. As often with this type of evaluation, their conclusions are rather mixed.²⁹ In a nutshell, the spread of temporary jobs generally acts as a stepping-stone for men and skilled workers and leads to dead-ends for women and school-leavers.³⁰ More generally the individual characteristics (observed and unobserved) are key determinants to assess whether temporary jobs promote workers toward permanent contracts or trap them in precarious jobs. In the particular case of France, a recent study by Blasco and Givord (2010) evaluates how temporary jobs affect the professional career of young workers using data from the Training and Occupational Skill³¹ survey in 2003. Their estimates show a strong influence of individual characteristics on transitions and that the initial type of contracts may have long-term effect on the workers' career. In particular, the authors show that temporary jobs lead more often to unemployment and/or inactivity than to permanent jobs. It follows that the so called stepping-stone effect is rather weak; a conclusion also shared by Givord and Wilner (2009) in another empirical evaluation using French data.

²⁹ See among others Booth et al. (2002) for UK, Bruno et al. (2012) for Italy, Garcia-Pérez and Munoz-Bullon (2011) for Spain, Graaf-Zijl et al. (2011) for the Netherlands.

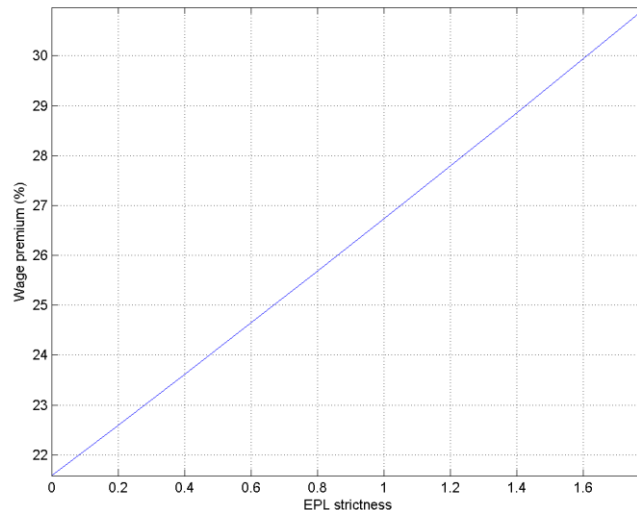
³⁰ Note however that there is a considerable heterogeneity between countries; see e.g. Bruno et al. (2012) for a more detailed discussion.

³¹ Enquête "Formation et Qualification Professionnelle (FQP)".

4.2. Wage inequality

Two-tier systems increase wage inequality between workers employed on different types of contract. Making use of the model developed in the appendix, the figure below shows how the EPL gap for permanent jobs affects the wage premium on permanent contracts.

Figure 15 Effects of a rise of EPL strictness for permanent jobs on the wage premium



As can be inferred from the figure, temporary jobs pay on average lower wages than permanent jobs for workers with the same characteristics. There are two reasons for this result. First, the duration of temporary jobs is shorter than that of permanent jobs. This induces a lower average surplus for temporary jobs. Second, the impossibility to terminate contracts before their date of termination implies that in some cases employers pay positive wages to unproductive temporary workers. The prediction of the model is supported by empirical evidence that temporary workers get lower wages than permanent workers controlling for a large set of observable characteristics. In country specific estimates for instance, Booth et al. (2002) find that temporary workers in Britain earn less than permanent workers with a wage premium of about 8.9 per cent for men and 6 per cent for women. Hagen (2002) finds an even larger gap of about 23 percent in Germany, controlling for selection on unobservable characteristics, while more recently Pfeifer (2012) finds a smaller premium of about 10 per cent still for Germany.

Using micro-data from the ECHP³² and EUSILC,³³ Boeri (2011) estimates the monthly wage premium on permanent contracts for 15 European countries. The results are reported in the table below.

³² European Community Household Panel.

³³ European Union Survey on Income and Living Condition.

Table 5 Wage premium for permanent contracts for 15 European countries. Legend: (*) significant at 99 per cent, (**) significant at 95 per cent, (*) significant at 90 per cent**

Country	Premium (%)	Country	Premium (%)
Austria	20.1 (***)	Italy	24.1 (***)
Belgium	13.9 (***)	Luxembourg	27.6 (***)
Denmark	17.7 (***)	Netherlands	35.4 (***)
Finland	19.0 (***)	Portugal	15.8 (***)
France	28.9 (***)	Spain	16.9 (***)
Germany	26.6 (***)	Sweden	44.7 (***)
Greece	20.2 (***)	United Kingdom	6.5 (*)
Ireland	17.8 (**)		

Source: Boeri (2011)

The wage premium ranges from a low 6.5 per cent in the UK to a large 44.7 per cent in Sweden. By and large, empirical evidence points to a substantial wage premium for permanent contracts even if the estimates may significantly differ from one study to the other.

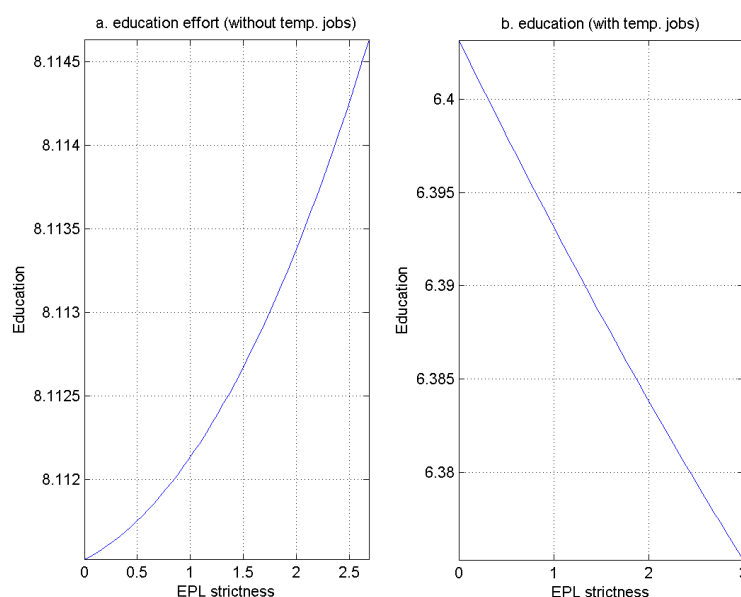
4.3. Human capital

Dualism does not only affect labour turnover and wage inequality. It may also be detrimental to human capital accumulation. As shown above, two-tier labour markets introduce counteracting effects on labour turnover, as they reduce job destruction for permanent jobs but increase churning for temporary jobs. Education investments are related to labour turnover and both workers and firms may react to change in regulations. First, the spread of temporary jobs may induce individuals to modify their human capital investments due to the fact that the return to schooling is lower in an environment characterized by job instability. Second, the very nature of temporary jobs may encourage firms to provide less firm-sponsored training because the instability of the employment relationship is likely to prevent firms to reap the benefit of their investment. In this section, we examine these two aspects of dual labour markets.

Dual labour markets affect initial education investments. To understand this point, our analysis bears on a slightly modified version of the model presented in the appendix.³⁴ The graph below depicts the effect of EPL strictness on education investments in two different labour markets: one without temporary jobs (panel a) and one with temporary jobs (panel b).

³⁴ See Charlot and Malherbet (2013) for a complete and detailed analysis.

Figure 16 Education effort in a labour market without temporary jobs (panel a) and in a dual labour market (panel b)



Strikingly, the impact of EPL strictness on educational investments depends on the type of labour market: Educational investments increase with EPL strictness when there is only one type of labour contract and decrease with EPL strictness in a two-tier labour market. The intuition for this result goes as follows. In panel a, the increase in EPL strictness by fostering labour hoarding makes the employment relationship more stable and thus raises the return to education. This is the beneficial effect of EPL. In panel b, the beneficial effect of EPL on the job destruction for permanent jobs is offset by the rise in labour turnover for temporary jobs, as their transformation rate into permanent jobs is lower when EPL strictness increases. This effect is detrimental to educational investments.

Two-tier labour markets do not only affect the return to schooling. They are also likely to alter the provision of firms' sponsored-training to temporary workers. As a matter of fact, firms have little incentive to train their workers on temporary contracts due to the lack of a sustainable relationship between the firm and the worker. This prediction is confirmed by a number of empirical evidence. For instance, Albert, Garcia-Serrano and Hernanz (2005) using Spanish data³⁵ show that workers on temporary contracts are less likely to be hired by training firms. In addition, when these workers are lucky enough to be hired by a training firm, the probability that they get trained is significantly lower compared to workers hired on permanent contracts.³⁶

³⁵ The authors use the "Working Condition Survey" (ECVT), a yearly survey created by the Spanish Ministry of Labor and Social Affairs.

³⁶ Similar conclusions are reached by Booth et al. (2002) for the UK or Picchio and van Ours (2011) for the Netherlands.

4.4. Other aspects

Dual labour markets are likely to affect individuals in many other dimensions that the ones highlighted above such as job satisfaction, social integration and health.

Two-tier systems have produced a divided labour market with an unequal repartition of risk between workers. Essentially some workers do not bear any risks (typically workers on permanent contracts with a low layoff probability) while some bear many risks (typically workers on temporary/atypical contracts with a high churning rate). The stringency of EPL on permanent contracts does not however protect workers against a feeling of insecurity and precariousness (see e.g. Clark and Postel-Vinay, 2005, Postel-Vinay and Saint Martin, 2005). The intuition for this result goes as follows: the complexity and the strictness of EPL favour the spread of temporary jobs that in turn increases the volatility of the labour market and decreases labour mobility from temporary to permanent employment (see section 4.1.). As a consequence, workers tend to feel more insecure (see e.g. Boeri and Garibaldi, 2007). In addition, the complexity of the law creates risks of abuses and favours the circumvention of legislation by tacit or legal arrangements at the expense of the more precarious and fragile workers (see e.g. Cahuc and Kramarz, 2005).

Following Booth et al. (2002), a number of recent studies have focussed on the link between temporary jobs and job satisfaction (see Bardasi and Francesconi, 2004, Origo and Pagani, 2009, or de Graaf-Zijl, 2012). The main results can be summarized as follows: there does not necessarily seem to be a significant difference in overall job satisfaction between workers holding a permanent contract and those holding a temporary contract. This general result is in line with the evidence reported in section 2. When subjected to closer scrutiny however, it is apparent that, among temporary workers, seasonal and casual workers are likely to be less satisfied with their jobs than permanent workers. This is the case also with some specific characteristics of the job such as employment security and career path.

Beyond job satisfaction, the social integration of the workers on temporary jobs may be weakened. Holding a temporary job is often in itself an obstacle to get a loan or to rent a flat if the worker does not benefit of external collateral. Cahuc and Kramarz (2005) using data from the French LFS show that the access to housing is far more difficult for workers on temporary jobs than for those on permanent jobs.

Finally, temporary jobs may also be detrimental to health.³⁷ A number of recent studies have pointed out that workers on temporary contracts have higher injury rate (Nola et al., 2001, Guadalupe, 2003),³⁸ higher psychological distress (Quesnel-Vallée et al, 2010), higher strain and higher anti-depressant medication (Virtanen et al., 2008).

³⁷ See Virtanen et al. (2004) for a comprehensive meta-analysis.

³⁸ Saloniemi and Salmiminen (2010) have challenged this result. Using Finish data, the authors show that the difference in injury rates for temporary and permanent workers is not significant. However, the main explanatory factor is sector specific to the extent that temporary jobs are concentrated in public services (education and health care) with a predominance of female workers.

5. Beyond segmentation: reforming the French labour market

There is a broad consensus that labour market segmentation impedes a normal functioning of the labour market. For instance, Italy and Spain have recently initiated reforms intended to reduce labour market segmentation. The issue of how to reform the labour market is however more controversial. In the case of France, two lines of proposals have been put to the fore. In the former case, the reform consists in strengthening taxation on temporary contracts in order to spur the use of open-ended contracts. This is exactly what is at the heart of a recent agreement between social partners in France. In the latter case, the reform is more structural and promotes the recourse to a single or unified labour contract. In what follows, we will present the French national inter-professional agreement from January 2013 and make out the general contours of a unified contract as it has been discussed in France.

5.1. The French national inter-professional agreement from January 2013³⁹

In January 2013, a national inter-professional agreement (ANI) between social partners has been signed. However, before we go any further in the description of this agreement, it should be noted that at the time this report is written, the transcription of the agreement into a draft law has not been achieved, and hence has not been submitted to the Parliament.⁴⁰ In this respect, some of the details of the law are not known with certainty at this time.

In a nutshell, the ANI is supposed to create important breakthroughs that will significantly improve the functioning of the labour market. It consists in providing more security for the firms and the workers and, more relevant for our purposes, it consists in bringing down labour market segmentation. In that area, the two key features of the agreement relate to temporary contracts and collective dismissals.

As regards temporary contracts, the employers' contributions to unemployment insurance will be increased for the contracts whose durations are less than three months. Today the employers' contribution rate to unemployment insurance is worth 4 per cent whatever the type of contracts. The agreement makes provision for an increase in the employers' contribution rate to 7 per cent for temporary contracts whose duration are less than 1 month, and to 5.5 per cent for those whose duration is between 1 and 3 months. Special provisions have been introduced for sectors where temporary contracts are considered customary (see section 3.1). For this type of contract, i.e. "*contrat d'usage*", the employers' contribution rate will be slightly increased to 4.5 per cent for temporary contracts whose duration is below 3 months.

As regards collective dismissals, the legal procedure is modified for large firms, i.e. firms with more than 50 employees. This change in the legislation is intended to provide more predictability on collective dismissals and hence to prevent long and costly procedures by court (see section 3.2.2). The general idea consists in privileging

³⁹ « *Accord national interprofessionnel (ANI) du 11 Janvier 2013* ». The signatory parties are for the unions, CFDT, CFE-CGC and CFTC, and for the employers, MEDEF. Details of the ANI can be found at: <http://directe.gouv.fr/accord-national-interprofessionnel-du-11-janvier.html>

⁴⁰ The draft law will be examined by the parliament in April 2013 and is expected to enter into force in May 2013.

negotiations between the social partners in order to shorten the duration of collective layoff procedures and to enhance *ex-ante* conciliation. A redundancy programme can be approved thanks to a majority agreement between the social partners or through a unilateral administrative procedure (“*procédure d’homologation*”). In the latter case, the procedure will have to take place in two stages. First, the contours of the layoff procedure must be presented for consideration to the work council. Second, it shall require an agreement from the public administration.⁴¹ The administration has 21 days to provide an agreement on the procedure. If the demand is left unanswered, the agreement is deemed approved.

It is too early to judge the relevance of the ANI. We may however express reserves about the scope of the agreement. First, although the agreement has been acclaimed as an ambitious reform of the French labour market, the fact remains that it does not lead to a general disruption of the French labour code. In this respect the reform can be seen as marginal. Second, temporary contracts with very short duration are overrepresented in sectors where customary contracts apply. For instance, for the year 2011 in France, more than 56 per cent of the contracts whose duration is shorter than one month are gathered in sectors where the “*contrat d’usage*” applies. Restricting to those sectors, it appears that more than 86 per cent of the contracts are shorter than one month (ACOSS, 2011).⁴² It follows that the increase in the employers’ contributions to unemployment insurance will only be marginal for most temporary contracts. Accordingly, it seems unreasonable to expect major changes in hiring practices. Finally and while pointing in the right direction, it is unlikely that the reform of collective dismissals, as proposed in the agreement, will be sufficient to spur the use of open-ended contracts for at least two reasons. First, it can be extremely difficult to reach an agreement with the unions to the extent that two of the largest unions (namely CGT and CGT-FO) have not signed the agreement. Second, as it has been pointed out by lawyers, the dismissal procedure is likely to initiate new types of litigation. In this respect, the enactment of the law will allow to better determine the contours of the ANI.

4.2. The contours of a single or unified contract

A natural way to reduce segmentation is to make employment protection homogenous across different contractual relations. Proposals adopting this idea put forward a unified or a single contract. Such contractual arrangement should of course make firms internalize the social cost of their employment practices and impede excess labour turnover, while enabling them to restructure in order to become more competitive.

The key impediment to transitions from STJ to LTJ is the very low transformation rate of STJ to LTJ within the same firm. In dual labour markets (as the French one), employers face a sharp discontinuity in employment protection when they decide whether or not to transform a temporary contract into an open-ended contract. In the French case, this discontinuity is driven by the payments that judges can ask recruiters when they consider the dismissal of open-ended contract as illegal. Those payments have a minimum threshold of 6 months of wage. For instance, consider the dismissal of worker whose 18 month fixed-term contract has just been converted into a LTJ. If the dismissal is contested and the worker wins, he receives at least 6 months of wage, i.e. one third of the total labour cost (6

⁴¹ Administrative approvals are provided by the « Direction Régionale des Entreprises, de la Concurrence, de la Consommation, du Travail et de l’Emploi (DIRECCTE) ».

⁴² More accurately according to the DUE, in the year 2011, there are about 13.24 million temporary contracts with duration shorter than one month. Among them about 7.41 million temporary contracts are in sectors where the “*contrat d’usage*” applies. As a whole, there are about 8.54 million temporary contracts in those sectors.

over 18 months). Before that conversion, the “dismissed” worker would be entitled to only 10 per cent of total labour cost. The first objective of the unified/single contract is thus to suppress this threshold effect and make firing costs vary continuously with seniority.

Second, it is well-known that dual labour markets foster inefficient labour turnover (see section 4). In this respect, a unified or single contract should therefore induce firms to internalize the social costs associated with excessive turnover. Such a contract could have firing costs decreasing with seniority. This would make labour cost of firms with high turnover greater than that of firms investing in long term employment relationship.

Third, temporary and permanent job do not only differ in the amount of firing costs, they also differ in the uncertainty associated to these costs, i.e. in the difficulty to foretell the outcome of a dismissal procedure for the firm. In the French case, firing costs hardly exceed statutory severance payments for fixed-term contracts, whereas they vary a lot in the case of open-ended contract termination depending on eventual judges’ decisions. The high level of uncertainty is clearly inefficient for open-ended contract termination. Proposals for a single or unified contract should reduce discretionary decisions on severance payments.

In the European debate, several authors have promoted the idea of a single/unified contract (among others Cahuc and Kramarz 2005, Boeri and Garibaldi 2007, Blanchard and Tirole 2008, Bentolila et al. 2012, Cahuc 2012). Single contract reforms suppress fixed-term contracts, while unified contract reforms preserve the possibility to agree on a termination date at the beginning of the employment relation. We detail here the proposal by Cahuc (2012) for a unified contract.

One key ingredient of this reform is that economic restructuring is a serious and genuine cause for dismissal. In France, the appreciation of the economic strategy leading to job destruction is left to judges. Jurisprudence has led to a narrow interpretation of economic dismissal where the cause is serious and genuine only when the preservation of competitiveness is at stake. This makes economic restructuring particularly costly and more importantly uncertain (see Section 3.2.).

Cahuc and Kramarz (2005) and Cahuc (2012) proposal for a unified contract applies to the French case but is also relevant for a number of European countries. This proposal has two main characteristics: First, the legal cost of interrupting the contract depends on the employee’s seniority, independently of the nature of the work contract, fixed-term or open-ended. Second, in the event of contract termination, the employer pays an indemnity to employee, and a tax called “solidarity contribution” to the public authorities.

As regards severance payments, it has been proposed that severance payments should amount to 10 per cent of total labour cost for any job lasting less than 18 months. For open-ended contracts, this proposition increases the statutory rate, but the severance payments stay below the typical payments decided in court. For any employment relationship lasting more than 1.5 year and less than 10 years, the severance payments should increase by 1/60 of total labour cost per year of seniority (starting from 1.5 year). This makes firing costs decrease continuously with seniority.

As regards transfers to public authorities, it has been recommended that any economic dismissal or fixed-term contract termination should be taxed 1.6 per cent of the total labour cost. This new tax would ensure recruiters not to be sued to court except for abusive or discriminatory practices. The amount raised by such taxes corresponds to the actual firing costs paid by the employers in court after economic dismissal (excl. statutory severance payments). Such a reform would be neutral in terms of overall employment protection. This new tax, labelled “solidarity contribution”, would be an extra benefit to the unemployment insurance fund and increase the efficiency of the public employment service. Firms would be discharged from any reemployment obligation as long as they pay the “solidarity contribution”.

At this stage, it should be noted that some concerns have been raised as regards the feasibility of a single or unified contract from a legal point of view. For instance, it has been argued that such contractual arrangement may violate the ILO convention C158 (Termination of Employment Convention)⁴³ and more particularly articles 2 and 4 of the convention that specify the conditions under which: (i) a worker can be excluded from the protection of the convention; (ii) there is a valid reason for the termination of an employment contract. To a large extent these concerns originate from the failure of the new employment contract (“*Contrat Nouvelle Embauche*”, see table 4) that has been declared contrary to the C158 convention by the ILO in 2007 and illegal by the French Court of Cassation in 2008.⁴⁴ The outlines of the contract detailed above do not however suffer from the same shortcomings as the new employment contract (CNE). In this respect, there does not appear to be any significant legal obstacles that prevent the use of a unified contract.

⁴³ The convention is available online at:

http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_ILO_CODE:C158

⁴⁴ For further details see e.g. Lepage-Saucier, Schleich and Wasmer (2013) or the ILO note on Convention No. 158 available at:

http://www.ilo.org/wcmsp5/groups/public/@ed_norm/@normes/documents/meetingdocument/wcms_100768.pdf

6. Conclusion

Over the last decades, the surge in unemployment in many European countries has favoured reforms *at the margin*. France is no exception. Those reforms have fostered two-tier systems, as the increase in labour market flexibility has taken place mainly through a series of marginal reforms that liberalized the use of fixed-term and/or non-standard employment contracts. Two-tier systems have promoted the emergence of dual employment protection, often termed as *flexibility-at-the-margin*, which can be broadly defined as the coexistence of both long-term contracts, which benefit from stringent protection, and short-term contracts with little or no protection. This combination creates labour market segmentation, traps workers in a recurring sequence of frequent unemployment spells, favors unequal repartition of risk between workers, enhances inequalities and produces uncertain effects on economic outcomes (aggregate employment...).

As a whole, the French labour legislation in force appears extremely complex and unusual in many respects. As a consequence, the enforcement of the law is difficult and the law is only apparently very protective. As a matter of fact, the legislation tends to be more and more circumvented as indicated by the very few fair or justified dismissals in job destruction, the surge in tacit or legal separation agreements (e.g. “*rupture conventionnelle*”) and the abuses in the use of precarious contracts. Put in a nutshell, we think the current legislation needs to be modernized and reformed in great depth.

A possible direction to reform the current legislation is to promote a single/unified contract and hence put an end to the current hotchpotch of contractual arrangements. The reform should closely follow the spirit of the law and make the open-ended contract (CDI) the norm as described in the French labour code which stipulates that the normal and general labour contract between a firm and a worker is the permanent or open-ended contract. The rights associated with this contract should increase steadily with seniority to avoid any threshold effect as in the case of a segmented labour market.

However, it should be kept in mind that this type of contracts is not an end in itself, and should be part and parcel of an overall reform in the labour legislation. First, we support the idea that firing costs should comprise a contribution to the unemployment insurance system, possibly decreasing with the seniority or increasing with the churning rate (i.e. to promote a system similar in spirit to the US experience rating). Second, we think that the reform should be designed to eliminate the incentives to go to court, except for discrimination cases, and to prevent the legal system to second guess the decision of the firms. Finally, it appears to us of paramount importance that these measures should provide genuine security for career paths underpinned by a well designed public employment service with efficient counselling and training schemes.

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Appendix

A.1. Data

French Labour Force Survey (“*Enquête emploi*”):

We use LFS from 1991 through 2010. The survey was redesigned in 2003. Prior to 2003, individuals were surveyed each year in March (except in January for LFS 1999), 3 years in a row. After 2003, each individual is surveyed each quarter, 6 quarters in a row. The redesign implied huge changes in the process of the survey, which results in data issues for year 2002.

From 2003 to 2010, we use the longitudinal structure of the LFS. Quarterly transitions are computed following an individual across two surveys. This may induce a bias as individuals who change residence are not followed in the survey.

Before 2002, we compute transitions from a retrospective calendar where individuals report their labour status 1 month prior to the interview, 2 months... 12 months prior to the interview. Several studies have shown that retrospective data are biased with recall errors. This is the price to pay for observing quarterly transitions with annual surveys. Another drawback of the LFS retrospective calendar is that it captures rough states (declared unemployment and not ILO unemployment; STJ contracts without any distinction for seasonal work, temporary help agency work and apprenticeship work).

ACOSS-DUE:

The DUE (“*Déclaration Unique d’Embauche*”) is a unique dataset compiled by the ACOSS (“*Agence Centrale des organismes de Sécurité Sociale*”), the agency in charge of the management of the French social security. DUE records the universe of the inflows into employment in the private sector and in the public sector for non civil servants.

European Working Condition Survey (EWCS):

We use the 5th wave of the European Working Condition Survey (2010) funded by the European Foundation for the Improvement of Living and Working Conditions. A total of 44,000 workers from 34 European countries were interviewed in 2010 on their working and employment conditions. The French sub sample comprises 3 046 workers.

A.2. Additional descriptive elements and statistics to Section 2

Table a Short Term Job (STJ) Probability (vs. LTJ)

VARIABLES	(1) STJ
ag15_24	0.421*** (0.0200)
ag35_45	-0.0527*** (0.00298)
ag45_55	-0.0749*** (0.00262)
ag55_	-0.0638*** (0.00280)
women	0.0602*** (0.00215)
college	-0.0172*** (0.00343)
vocational	-0.0407*** (0.00328)
low_second	-0.0198*** (0.00471)
no_educ	-0.0261*** (0.00353)
Constant	0.136*** (0.00302)
Observations	131,096
R-squared	0.031

1. Robust standard errors in parentheses

2. *** p<0.01, ** p<0.05, * p<0.1

Source: LFS 2010

Note: Linear probability model, reference: male between 25 and 34 years old with upper secondary degree.

Table b Transitions of young individuals (15-24 years old) between LTJ, STJ, unemployment (U) and other destinations

Previous State (T-1)	Current State (T)				Total
	0.Other	1.U	2.STJ	3.LTJ	
	%	%	%	%	%
0.Other	93.7	3.7	1.8	0.9	100.0
1.U	29.5	55.8	11.4	3.3	100.0
2.STJ	14.6	10.1	68.8	6.4	100.0
3.LTJ	4.3	2.7	1.5	91.5	100.0
Total	76.1	8.3	6.6	9.0	100.0

Source: LFS 2010. Authors' calculations

Table c Transitions of middle-age individuals (25-49 years old) between LTJ, STJ, unemployment (U) and other destinations

Previous State (T-1)	Current State (T)				Total
	0.Other	1.U	2.STJ	3.LTJ	
	%	%	%	%	%
0.Other	92.5	4.8	1.3	1.4	100.0
1.U	22.3	63.2	9.4	5.0	100.0
2.STJ	6.9	8.8	78.5	5.8	100.0
3.LTJ	1.3	0.8	0.3	97.5	100.0
Total	36.2	7.7	6.1	50.0	100.0

Source: LFS 2010. Authors' calculations

Table d Transitions of senior individuals (50-65 years old) between LTJ, STJ, unemployment (U) and other destinations

Previous State (T-1)	Current State (T)				Total
	0.Other	1.U	2.STJ	3.LTJ	
	%	%	%	%	%
0.Other	98.1	1.3	0.2	0.4	100.0
1.U	24.7	66.4	6.1	2.8	100.0
2.STJ	7.4	8.2	80.6	3.8	100.0
3.LTJ	2.9	0.6	0.1	96.4	100.0
Total	64.2	3.5	2.1	30.1	100.0

Source: LFS 2010. Authors' calculations

Table e Transitions of individuals with some upper education between LTJ, STJ, unemployment (U) and other destinations

Previous State (T-1)	Current State (T)				
	0.Other	1.U	2.STJ	3.LTJ	Total
	%	%	%	%	%
0.Other	96.0	2.1	1.1	0.8	100.0
1.U	21.8	57.6	13.0	7.7	100.0
2.STJ	8.6	6.6	79.5	5.3	100.0
3.LTJ	1.4	0.7	0.3	97.6	100.0
Total	52.0	4.2	5.5	38.3	100.0

Source: LFS 2010. Authors' calculations

Table f Transitions of individuals with upper secondary education between LTJ, STJ, unemployment (U) and other destinations

Previous State (T-1)	Current State (T)				
	0.Other	1.U	2.STJ	3.LTJ	Total
	%	%	%	%	%
0.Other	94.0	3.4	1.5	1.1	100.0
1.U	29.2	55.0	11.2	4.6	100.0
2.STJ	10.9	9.1	74.5	5.5	100.0
3.LTJ	2.0	0.9	0.4	96.7	100.0
Total	53.5	6.0	6.0	34.6	100.0

Source: LFS 2010. Authors' calculations

Table g Transitions of individuals with vocational education between LTJ, STJ, unemployment (U) and other destinations

Previous State (T-1)	Current State (T)				
	0.Other	1.U	2.STJ	3.LTJ	Total
	%	%	%	%	%
0.Other	94.7	3.5	1.0	0.9	100.0
1.U	23.4	62.9	9.9	3.9	100.0
2.STJ	7.8	9.8	75.5	6.9	100.0
3.LTJ	1.8	0.8	0.3	97.1	100.0
Total	45.9	6.7	4.5	42.9	100.0

Source: LFS 2010. Authors' calculations

Table h Transitions of individuals with lower secondary education between LTJ, STJ, unemployment (U) and other destinations

Previous State (T-1)	Current State (T)				
	0.Other	1.U	2.STJ	3.LTJ	Total
	%	%	%	%	%
0.Other	96.6	2.3	0.6	0.5	100.0
1.U	23.8	65.6	7.6	2.9	100.0
2.STJ	8.1	12.1	74.1	5.7	100.0
3.LTJ	2.3	1.0	0.3	96.4	100.0
Total	67.9	6.2	3.4	22.4	100.0

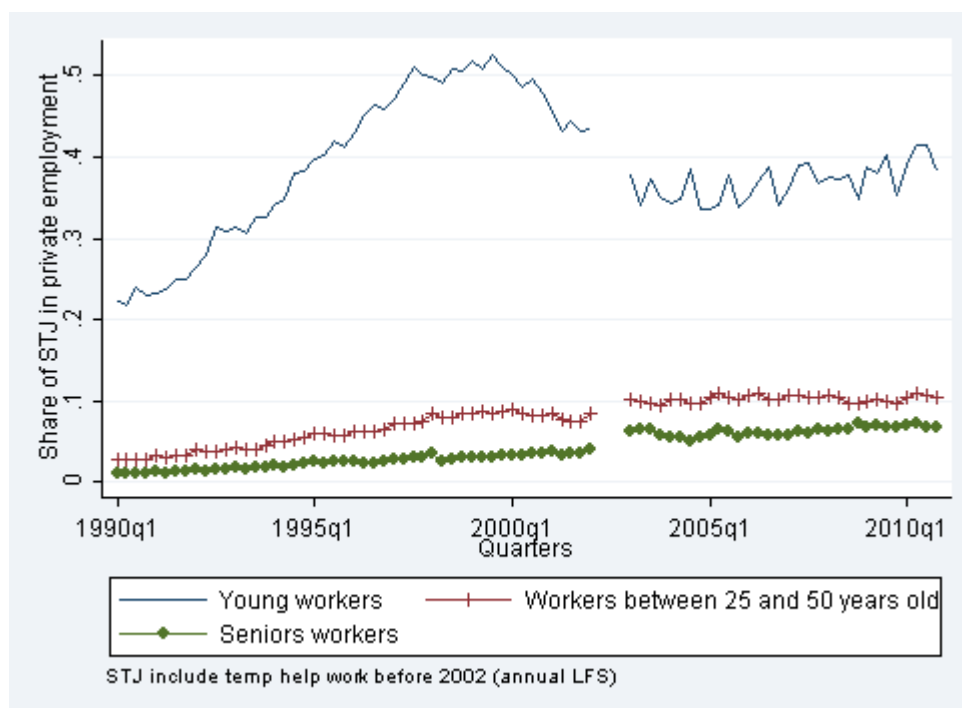
Source: LFS 2010. Authors' calculations

Table i Transitions of individuals with primary education (or less) between LTJ, STJ, unemployment (U) and other destinations

Previous State (T-1)	Current State (T)				
	0.Other	1.U	2.STJ	3.LTJ	Total
	%	%	%	%	%
0.Other	95.2	3.6	0.5	0.7	100.0
1.U	24.4	66.9	6.1	2.6	100.0
2.STJ	7.9	10.8	76.6	4.7	100.0
3.LTJ	2.6	1.0	0.3	96.1	100.0
Total	59.0	8.5	3.6	28.8	100.0

Source: LFS 2010. Authors' calculations

Figure a Share of LTJ by age



Source: LFS. Authors' calculations

A.3. Further elements on the French legislation: *Rupture conventionnelle*

“*Rupture conventionnelle*” or dismissal by mutual consent is a new severance modality that has been introduced in 2008.⁴⁵ It is framed by the articles L. 1237-11 to L. 1237-16 of the French labour code. It obeys specific procedures, applies to open-ended contracts only and is exclusive from other modalities such as layoffs for economic reasons or quits.

The cornerstone of this modality is the specification of a contract between the firm and the worker that sets out general terms and conditions upon separation (e.g. date of termination of the contract, severance payments, notice periods, etc.). Contrary to the case of a dismissal for economic reasons (see table 3), the law does not stipulate any predetermined length for the notice period which is at the discretion of the two parties. The contract gives the right to compensation (“*indemnité spécifique de rupture conventionnelle*”) that can be freely bargained between the firm and the worker but cannot be lower than the legal amount paid in case of a dismissal for economic reasons.⁴⁶ Finally and contrary to quits, under standard eligibility conditions, the worker is entitled to unemployment insurance.

⁴⁵ This modality is part of the law number 2008-596, « *Portant modernisation du marché du travail* », introduced by the Fillon government.

⁴⁶ In 2009, according to the DARES (see DARES Analyses, 2011), severance payments under “*rupture conventionnelle*” have provided on average a premium of 0.4 month of wage per year of seniority compared to the minimum legal amount authorized by the law.

Once an agreement has been reached by the two parties, the enforcement of the contract is subject to the application of a two weeks revocation period (the firm and/or the worker may renege the contract during this period) and then subject to certification by the administrative authority.⁴⁷ This authority has two weeks to agree or to reject to the terms and conditions of the contract. In the absence of a response from the administrative authority, the contract is implicitly/tacitly deemed accepted and the firm and the worker separate.

A.4. A search and matching model of a segmented labour market

We develop a search and matching model in the spirit of Mortensen and Pissarides (1994) that borrows from Bentolila et al. (2012), Cahuc et al. (2012), and Charlot and Malherbet (2012). The model incorporates the main characteristics of the French labour market. A summary of relevant details is given in this appendix and we refer the interested reader to the above mentioned articles.

A.4.1. Outline of the model

The main features of the model are as follows. First, there is a continuum of infinitely lived risk-neutral workers and firms, with a common discount rate $r > 0$. The measure of workers is normalized to 1. Job matches have a common idiosyncratic productivity distribution $G(x)$, drawn over the support $[x_l, x_u]$. The idiosyncratic productivity shocks follow a Poisson distribution with incidence rate λ . For the sake of simplicity, it is assumed that the productivity of new matches is equal to the upper bound of the productivity distribution, as in Mortensen and Pissarides (1994).

There are two types of contracts: temporary and permanent. Permanent contracts are the “regular” type of contracts and do not stipulate any pre-determined duration. They are protected by dismissal costs, F , paid by firms. These costs are not transferable to the workers and therefore consist in red tape and legal costs rather than severance payments.⁴⁸ Temporary contracts stipulate a fixed duration and are not renewable.⁴⁹ In contrast with most of the previous literature, we assume that temporary jobs cannot be destroyed before their date of termination.⁵⁰ Temporary jobs are terminated with per unit of time probability v , at which point firms either convert them to permanent jobs or destroy them at no cost. A new value of productivity is drawn upon conversion.

At their date of termination, temporary jobs can be either destroyed at zero cost or transformed into permanent jobs. Trying to mimic realistic wage bargaining procedures, we assume that wages in permanent jobs are renegotiated by mutual agreement whereas they are fixed in temporary jobs until the contract expire. Unemployed workers have access to temporary jobs with probability p , exogenously set as EPL policy, and to initial permanent jobs with probability $1 - p$.

⁴⁷ Certifications are provided by the « Direction Régionale des Entreprises, de la Concurrence, de la Consommation, du Travail et de l’Emploi (DIRECCTE) ».

⁴⁸ See e.g. Kramarz and Michaud (2010).

⁴⁹ For a theoretical model where temporary contracts are renewable see Cahuc et al. (2012).

⁵⁰ This assumption is in line with actual regulations in many European countries. For further details see Cahuc et al. (2012, Appendix A).

There are matching frictions on the labour market captured by a standard matching function as in Pissarides (2000), with matching rate $q(\theta)$ for vacancies and $\theta q(\theta)$ for the unemployed. Labour market tightness is given by $\theta=v/u$ where v and u are the masses of vacancies and unemployment respectively.

A.4.2. Value functions

Asset values can be defined as follows. Let Π^v , Π^t , Π^{ns} and Π^s denote the value to the firm of a vacant, a temporary, a new permanent/stable job or a continuing permanent/stable job respectively. In the same way, let W^u , W^t , W^{ns} and W^s denote the value to the worker of searching for a job, of being employed on a temporary, new or ongoing permanent/stable job respectively.

For firms, we have:

$$r\Pi^v = -\gamma + q(\theta) [p \max\{\Pi^t, \Pi^v\} + (1-p) \max\{\Pi^{ns}, \Pi^v\} - \Pi^v] \quad (1)$$

Holding a vacancy involves a flow cost γ and returns a worker at rate $q(\theta)$. When a contact occurs, the employer-worker pair discovers the type of contract that will be offered. A proportion p of workers can be hired on temporary contracts (indexed by t), while the remaining $1-p$ can be hired on new stable jobs (indexed by ns).

$$\begin{aligned} r\Pi^t(x) = & x - w^t + \lambda \left[\int \Pi^t(x') dG(x') - \Pi^t(x) \right] \\ & + \nu \left[\int \max\{\Pi^{ns}(x'), \Pi^v\} dG(x') - \Pi^t(x) \right] \end{aligned} \quad (2)$$

Temporary jobs pay a wage w^t . They can be hit by a productivity shock at a rate λ but will necessarily continue until the arrival of the date when the contract expires. Such an event arrives with a probability ν per unit of time. A new value of productivity is drawn upon termination. Then the job can be converted into a (new) stable job if the productivity is sufficiently high, or destroyed at no cost otherwise.

$$r\Pi^{ns}(x) = x - w^{ns}(x) + \lambda \left[\int \max\{\Pi^s(x'), \Pi^v - F\} dG(x') - \Pi^{ns}(x) \right] \quad (3)$$

New stable jobs pay a wage $w^{ns}(x)$. They are hit by a productivity shock at a rate λ and can either be continued as stable jobs or destroyed at a cost F .

$$r\Pi^s(x) = x - w^s(x) + \lambda \left[\int \max\{\Pi^s(x', \epsilon), \Pi^v - F\} dG(x') - \Pi^s(x) \right] \quad (4)$$

Stable jobs pay a wage $w^s(x)$. They are hit by a productivity shock with probability λ , and can either be continued or destroyed at a cost F .

In a similar vein, we can define the workers' asset values as follows:

$$rW^u = \theta q(\theta) [p \max\{W^u, W^t\} + (1-p) \max\{W^u, W^{ns}\} - W^u] \quad (5)$$

For the sake of simplicity, we normalize the utility from leisure to zero. A job seeker can meet with a firm at rate $\theta q(\theta)$. They can be proposed a temporary job at rate p , or hired on a new stable job at rate $1-p$. In either of the two cases, the value of the match-specific productivity always starts at the upper bound of the distribution of productivity.

$$rW^{ns}(x) = w^{ns}(x) + \lambda \left[\int \max\{W^s(x'), W^u\} dG(x') - W^{ns}(x) \right] \quad (6)$$

$$rW^s(x) = w^s(x) + \lambda \left[\int \max\{W^s(x'), W^u\} dG(x') - W^s(x) \right] \quad (7)$$

$$\begin{aligned} rW^t(x) &= w^t + \lambda \left[\int W^t(x') dG(x') - W^t(x) \right] \\ &\quad + \nu \left[\int \max\{W^{ns}(x'), W^u\} dG(x') - W^t(x) \right] \end{aligned} \quad (8)$$

A worker employed on a type $j=t, ns, s$ contract is paid a wage w^j . Temporary or permanent (stable or new stable) jobs are hit by a productivity shock at rate λ . Permanent jobs are either terminated or continued in the event of a shock. Again, temporary jobs will necessarily continue until the arrival of the date when they can be destroyed or converted, which occurs at rate ν .

A.4.3. Flows

Let $G(x_i)$ and $1-G(x_i)$ for $i=s, ns$, denote the cumulative distribution and the survival functions respectively. In addition, let us denote the mass numbers of temporary, new stable, stable and unemployed workers by T, N, S and U , respectively.

On average, a worker meets with a firm at Poisson rate $\theta q(\theta)$. As already mentioned, firms are only granted to hire a proportion p of their workforce on a short-term basis, due to legal restrictions. Accordingly, the remaining proportion, $1-p$, is hired on a long-term basis.

Let x_{ns} denote the productivity threshold below which temporary jobs are not converted into (new) stable jobs. Similarly let x_s denote the firing thresholds for both stable and new stable jobs. Those thresholds can be defined as follows $\Pi^S(x_s) = -F$ and $\Pi^{ns}(x_{ns}) = 0$. Long-term jobs (stable or new stable jobs) are destroyed at Poisson rate, $\lambda G(x_s)$, while short-term jobs (temporary jobs) are terminated –not converted– at Poisson rate, $\nu G(x_{ns})$. It can be shown that $x_{ns} \geq x_s$ whenever $F \geq 0$, the destruction rate should be higher for temporary than for permanent jobs. Finally, temporary jobs are converted into stable jobs at Poisson rate, $\nu [1-G(x_{ns})]$. In a steady state, flows are summarized by the following equations:

$$\begin{aligned}
\underbrace{\theta q(\theta)U}_{\text{unemployment outflow}} &= \underbrace{\nu G(x_{ns})T + \lambda G(x_s)[N + S]}_{\text{unemployment inflow}} \\
\underbrace{\nu T}_{\text{temporary employment outflow}} &= \underbrace{p\theta q(\theta)U}_{\text{temporary employment inflow}} \\
\underbrace{\lambda N}_{\text{new stable jobs outflow}} &= \underbrace{\theta q(\theta)(1-p)U + \nu[1 - G(x_{ns})]T}_{\text{new stable jobs inflow}} \\
\underbrace{\lambda G(x_s)S}_{\text{stable jobs outflow}} &= \underbrace{\lambda[1 - G(x_s)]N}_{\text{stable jobs inflow}}
\end{aligned}$$

The unemployment rate is then given by:

$$U = \frac{\lambda G(x_s)}{\lambda G(x_s) + \theta q(\theta) \left[1 + \frac{p\lambda G(x_s) - \nu p G(x_{ns})}{\nu} \right]} \quad (9)$$

From this expression, we see that unemployment is increasing in the job destruction rates $\lambda G(x_s)$ and $\nu G(x_{ns})$ for the various types of jobs and a decreasing function of the exit rates from unemployment $\theta q(\theta)$. Finally, when $p=0$, we get an expression similar to e.g. Pissarides (2000).

A.4.4. Equilibrium

Job creation is driven by free entry, which implies that firms enter the search market until all rents are exhausted. This implies $\Pi^V=0$. The equilibrium of the model is determined by the following set of equations. We refer the interested reader to Cahuc et al. (2012), and Charlot and Malherbet (2013) for a thorough derivation of those expressions. An equilibrium with endogenous job creation, endogenous job destruction, and dual labour contracts is a tuple $(x_{ns}^*, x_s^*, \theta, U)$ solving the following set of equations:

(i) free entry

$$\frac{\gamma}{q(\theta^*)} = \frac{1-\beta}{1+\beta\theta^*q(\theta^*)\left[\frac{p}{r+\nu} + \frac{1-p}{r+\lambda}\right]} \left[\frac{\frac{p}{r+\nu} \left[\frac{(r+\nu)x_u + \lambda x_u - \lambda \int_{x_l}^{x_u} G(x') dx'}{r+\lambda+\nu} + \frac{\nu}{r+\lambda} \int_{x_{ns}^*}^{x_u} (x' - x_{ns}^*) dG(x') \right]}{\frac{1-p}{r+\lambda} \left[x_u - \lambda F + \frac{\lambda}{r+\lambda} \int_{x_s^*}^{x_u} (x' - x_s^*) dG(x') \right]} \right] \quad (10)$$

(ii) destruction threshold for stable jobs

$$0 = x_s(\theta^*) + \frac{\lambda}{r+\lambda} \int_{x_s(\theta^*)}^{x_u} (x' - x_s(\theta^*)) dG(x') + rF \quad (11)$$

$$- \frac{\beta\theta^*q(\theta^*)}{1+\beta\theta^*q(\theta^*)\left[\frac{p}{r+\nu} + \frac{1-p}{r+\lambda}\right]} \left[\frac{\frac{p}{r+\nu} \left[\frac{(r+\nu)x_u + \lambda x_u - \lambda \int_{x_l}^{x_u} G(x') dx'}{r+\lambda+\nu} + \frac{\nu}{r+\lambda} \int_{x_{ns}(\theta^*)}^{x_u} (x' - x_{ns}(\theta^*)) dG(x') \right]}{\frac{1-p}{r+\lambda} \left[x_u - \lambda F + \frac{\lambda}{r+\lambda} \int_{x_s(\theta^*)}^{x_u} (x' - x_s(\theta^*)) dG(x') \right]} \right]$$

(iii) conversion threshold for temporary jobs

$$x_{ns}^* = x_s^* + (r+\lambda)F \quad (12)$$

(iv) flow equilibrium

$$U^* = \frac{\lambda G(x_s^*)}{\lambda G(x_s^*) + \mu(\theta^*) \left[1 + \frac{p\lambda G(x_s^*) - \nu p G(x_{ns}^*)}{\nu} \right]} \quad (13)$$

A.4.5. Calibration

In this section, we parameterize the model to assess the effects of the key policy parameters on the labour market equilibrium. The parameters and targets used refer to a typical Continental European country and are consistent with what can be found in recent developments on dual labour markets (see e.g. Bentolila et al., 2012). The length of a period is chosen to be a quarter. We set the discount rate r to 1.23 per cent which corresponds to a 5 per cent annual discount rate. As is common in the literature, we adopt a constant return to scale matching function of the form $m(U, V) = kU^\alpha V^{1-\alpha}$ where k is a mismatch parameter and α is the elasticity of the matching function with respect to unemployment. We assume α to be equal to 0.5, which is in the range of the estimates obtained by Petrongolo and Pissarides (2001). The value of the bargaining power parameter is set to 0.5 so that $\alpha = \beta = 0.5$ as is standard in the literature. Given the evidence that wages are log-normally distributed, we assume as in Mortensen and Nagypal (2007), that the idiosyncratic productivity component is log-normally distributed across the interval $[0; 5]$. Accordingly, we set $G = \log N(\xi, \sigma^2)$ where $\xi > 0$ is a scale parameter and $\sigma \in \mathfrak{R}$ is a shape parameter. We set $\nu = 0.8$, in line with the durations of temporary contracts found in e.g. Bentolila et al. (2012) for countries like France and Spain. The policy parameters F and p are set respectively to represent one third of the quarterly average wage and about 85 per cent of entries into temporary jobs as in Bentolila et al. (2012) or Cahuc et al. (2012).

Finally, the values of the remaining parameters are then chosen to match: (i) an unemployment rate of about 8.5 per cent; (ii) an average quarterly job destruction rate of 4 per cent for permanent jobs; (iii) a conversion rate for temporary jobs of 15 per cent; (iv) a temporary employment rate of 15 per cent. Parameter values are summarized in the table below.

Table j Benchmark parameters values

Baseline parameters					
<u>Parameter</u>	<u>Na</u>	<u>Value</u>	<u>Parameter</u>	<u>Name</u>	<u>Value</u>
Bargaining power	β	0.5	Log N-shape parameter	σ	1.75
Matching elasticity	α	0.5	Log N-scale parameter	ζ	-0.75
Discount rate	r	1.23%	Min productivity	x_l	0
Mismatch parameter	k	0.65	Max productivity	X_u	5
Temp. jobs termination rate	v	0.8	rate of productivity shocks	λ	0.05
Temp. jobs approval rate	p	0.85	Cost of vacancy	γ	0.5
Perm. Jobs firing costs	F	0.33w			

The numerical exercises reported in the text proceed as follows: we let the policy parameters F and p vary separately, and we depict the response of a number of labour market outcomes (e.g. destruction rate, conversion rate, wage premium, unemployment duration etc. ...) to the shifts in those policy parameters.

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