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Moving Towards a Single
Labour Contract: Pros, Cons
and Mixed Feelings

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By Nicolas Lepage-Saucier, Juliette Schleich and Etienne Wasmer

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ABSTRACT/RESUME

Moving towards a single labour contract: pros, cons and mixed feelings

This paper discusses the pros and cons of a single labour contract. After reviewing the current state of dualism in labour markets and the recent labour reforms in Europe, we discuss the various proposals to eliminate dualism. Next, we emphasise the costs of dualism and discuss whether they would be addressed by introducing a single labour contract. We notably introduce a distinction between reforms based on introducing a single contract with progressive seniority rights (CPSR) or a single contract with long probation periods (CLPP). We argue that their gains and costs are very different, especially with regards to the stigma effects and dualism. We also consider alternative reforms: the introduction of a single labour contract as such, and alternative reforms independent of the labour contract but addressing the issue of dualism (training, access to housing and to credit) and compare their costs and benefits.

We then build a simple model where both temporary and permanent contracts are available to firms. We use it to describe the demand for temporary contracts and the potential consequences of removing them and reach the following conclusions. First, employment protection has a moderate negative impact on employment, which can be mitigated when temporary contracts are available. Second, the elimination of temporary contracts decreases total employment (by 7 percentage points according to our calculations). Offsetting this effect would require an ambitious reform of employment protection laws of permanent contracts (in this specific setup, amounting to a cut in layoff costs by two thirds). Finally, the coexistence of temporary and permanent contracts may also have negative effects on social norms within the firm and workers' motivation and eliminating temporary contracts could therefore enhance productivity in this context.

We conclude that while there are costs to dualism, these are not as obvious and well established as the ones triggered by employment protection itself. Further, the single employment contract may partly be a *qui pro quo* (misunderstanding). Instead, more clarity on the objectives of a labour reform is needed.

JEL classification codes: J41; J42; J80

Keywords: employment contracts; dualism; single labour contract; unemployment; labour market reforms

Vers un contrat unique, vraiment ? Les avantages et les inconvénients

Ce texte discute des avantages et des inconvénients du contrat de travail unique. Après une discussion du dualisme et des réformes récentes du marché du travail en Europe, nous décrivons les différentes propositions visant à éliminer le dualisme. Nous soulignons ensuite les coûts du dualisme et tentons de comprendre si la création d'un contrat unique les supprimerait. Nous introduisons notamment une distinction entre les réformes basées sur un contrat unique à droits progressifs (CUDP, ou CPSR pour l'acronyme anglais), ou sur un contrat avec une période d'essai allongée (CPEA ou CLPP pour l'acronyme en anglais). Les gains et les coûts sont très différents selon l'hypothèse retenue, en particulier par rapport aux effets de stigmatisation des travailleurs et par rapport à la persistance du dualisme. Nous envisageons aussi d'autres réformes: outre celle de l'introduction d'un contrat unique, nous discutons de différentes réformes indépendantes du contrat de travail mais modifiant les conséquences du dualisme du marché du travail (accès à la formation, au marché du crédit, au logement) et en comparons les coûts et avantages.

Nous élaborons ensuite un simple modèle où les contrats permanents et temporaires sont tous deux à disposition des entreprises et coexistent en leur sein. Nous utilisons cette structure théorique pour décrire la demande de contrats temporaires et les conséquences potentielles d'en supprimer l'usage. Nous en concluons: premièrement, que la protection de l'emploi a un impact négatif mais modéré sur l'emploi total, qui est précisément atténué par l'existence de contrats temporaires; deuxièmement, que l'élimination des contrats temporaires diminue l'emploi total (de 7 points de pourcentage selon notre modèle); pour anihiler cet effet négatif, il faudrait une réforme radicale des contrats permanents (qui dans le cas d'espèce diminuerait des deux tiers les coûts des licenciements associés aux contrats permanents); enfin, la coexistence de contrats temporaires et permanents peut aussi avoir des conséquences négatives au niveau des normes sociales au sein de l'entreprise et sur la motivation des salariés; éliminer les contrats temporaires serait alors une amélioration de la productivité des entreprises.

Nous concluons sur le fait que si les coûts du dualisme sont réels, ils sont moins évidents et moins bien démontrés que ceux engendrés par la protection de l'emploi elle-même. De plus, le contrat unique pourrait être en partie un *qui pro quo*. Il serait au contraire utile de clarifier les objectifs fondamentaux des réformes du marché du travail.

Classification JEL : J41 ; J42 ; J80

Mots clefs : contrat de travail ; dualisme ; contrat unique ; chômage ; réformes du marché du travail

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Moving towards a single labour contract: pros, cons and mixed feelings*

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and Etienne Wasmer (Sciences Po, LIEPP)

First version: April 21, 2012. This version: January 21, 2013.

Abstract

This paper discusses the pros and cons of a single labour contract. After reviewing the current state of dualism in labour markets and the recent labour reforms in Europe, we discuss the various proposals to eliminate dualism. Next, we emphasise the costs of dualism and discuss whether they would be addressed by introducing a single labour contract. We notably introduce a distinction between reforms based on introducing a single contract with progressive seniority rights (CPSR) or a single contract with long probation periods (CLPP). We argue that their gains and costs are very different, especially with regards to the stigma effects and dualism. We also consider alternative reforms: the introduction of a single labour contract as such, and alternative reforms independent of the labour contract but addressing the issue of dualism (training, access to housing and to credit) and compare their costs and benefits.

We then build a simple model where both temporary and permanent contracts are available to firms. We use it to describe the demand for temporary contracts and the potential consequences of removing them and reach the following conclusions. First, employment protection has a moderate negative impact on employment, which can be mitigated when temporary contracts are available. Second, the elimination of temporary contracts decreases total employment (by 7 percentage points according to our calculations). Offsetting this effect would require an ambitious reform of employment protection laws of permanent contracts (in this specific setup, amounting to a cut in layoff costs by two thirds). Finally, the coexistence of temporary and permanent contracts may also have negative effects on social norms within the firm and workers' motivation and eliminating temporary contracts could therefore enhance productivity in this context.

We conclude that while there are costs to dualism, these are not as obvious and well established as the ones triggered by employment protection itself. Further, the single employment

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contract may partly be a *qui pro quo* (misunderstanding) Instead, more clarity on the objectives of a labour reform is needed.

Resumé

Ce texte discute des avantages et des inconvénients du “contrat de travail unique”. Après une discussion du dualisme et des réformes récentes du marché du travail en Europe, nous décrivons les différentes propositions visant à éliminer le dualisme. Nous soulignons ensuite les coûts du dualisme et tentons de comprendre si la création d’un contrat unique les supprimerait. Nous introduisons notamment une distinction entre les réformes basées sur un contrat unique à droits progressifs (CUDP, ou CPSR pour l’acronyme anglais), ou sur un contrat avec une période d’essai allongée (CPEA ou CLPP pour l’acronyme en anglais). Les gains et les coûts sont très différents selon l’hypothèse retenue, en particulier par rapport aux effets de stigmatisation des travailleurs et par rapport à la persistance du dualisme. Nous envisageons aussi d’autres réformes: outre celle de l’introduction d’un contrat unique, nous discutons de différentes réformes indépendantes du contrat de travail mais modifiant les conséquences du dualisme du marché du travail (accès à la formation, au marché du crédit, au logement) et en comparons les coûts et avantages.

Nous élaborons ensuite un simple modèle où les contrats permanents et temporaires sont tous deux à disposition des entreprises et coexistent en leur sein. Nous utilisons cette structure théorique pour décrire la demande de contrats temporaires et les conséquences potentielles d’en supprimer l’usage. Nous en concluons: premièrement, que la protection de l’emploi a un impact négatif mais modéré sur l’emploi total, qui est précisément atténué par l’existence de contrats temporaires; deuxièmement, que l’élimination des contrats temporaires diminue l’emploi total (de 7 points de pourcentage selon notre modèle); pour anihiler cet effet négatif, il faudrait une réforme radicale des contrats permanents (qui dans le cas d’espèce diminuerait des deux tiers les coûts des licenciements associés aux contrats permanents); enfin, la coexistence de contrats temporaires et permanents peut aussi avoir des conséquences négatives au niveau des normes sociales au sein de l’entreprise et sur la motivation des salariés; éliminer les contrats temporaires serait alors une amélioration de la productivité des entreprises.

Nous concluons sur le fait que si les coûts du dualisme sont réels, ils sont moins évidents et moins bien démontrés que ceux engendrés par la protection de l’emploi elle-même. De plus, le contrat unique pourrait être en partie un *qui pro quo*. Il serait au contraire utile de clarifier les objectifs fondamentaux des réformes du marché du travail.

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Executive summary

This paper discusses the pros and cons of implementing a single labour contract. First, we document the current state of labour markets in Europe, and describe the dualism of contracts. We then highlight cross-country differences with respect to the nature of contracts and review the recent reforms in European countries and the various proposals that attempt to eliminate dualism.

Next, we emphasise the costs of dualism and discuss whether they could be eliminated by a single labour contract. The various reforms are categorised depending on whether they seek to introduce: a single contract with progressive seniority rights (CPSR), a single contract with long probation periods (CLPP), or a combination of both. We then proceed to argue that their benefits and drawbacks are very different, especially with regards to stigma effects and dualism. We also discuss alternative reforms, independent of the labour contract but addressing the issue of dualism (training, access to housing and to credit) and compare their costs and benefit. We conclude that: i) introducing a single contract with progressive rights would still lead to inequality in seniority rights and may not eliminate inequality in general nor strictly speaking dualism (nonetheless it would at least eliminate the discontinuity in status); ii) removing temporary contracts would lead to adverse employment effects if permanent contracts remained unaffected; iii) fighting against the exclusion of temporary workers from training and housing markets can be done with either specific reforms of the permanent contract, or targeted reforms of training systems, and by improving the regulation of housing markets.

Assessing more formally the pros and cons of a reform implementing a single labour contract requires a model where firms have the possibility to use a combination of temporary and permanent contracts, which may or may not coexist in equilibrium. We therefore build a simple model where both types of jobs are available for firms. We use it to describe the determinants of the relative demand for temporary contracts. These determinants are: i) the perceived heterogeneity in skills which favours temporary contracts; ii) the growth rate of the economy which favours permanent contracts; iii) business cycle volatility which favours temporary contracts; iv) firing costs of permanent workers which raise the demand for temporary contracts and v) restrictions to the use of temporary contracts which reduce the demand for temporary contracts. Finally, short-run movements in total factor productivity (or of firm's profitability) have an ambiguous effect on the share of temporary contracts: as productivity is low, firms adjust employment with temporary contracts. Above a threshold, an improvement of total factor productivity or firms' profitability instead raises the share of permanent employment. Therefore, the gains from a single contract depend on a variety of factors and may be either high or low, depending on the economic context. In particular, the gains are the lowest during recessions, and the current crisis may not be the most suited period for eliminating temporary contracts.

We precisely use the model to assess the consequences of removing temporary contracts.

We illustrate four ideas that have been present in the literature but rarely or insufficiently acknowledged in the discussion: first, employment protection has a moderate, negative impact on total employment; the negative impact is actually mitigated due to the existence of temporary contracts; an elimination of temporary contracts leads instead to a drop in total employment (by 7 percentage points according to our calculations) and would therefore require an ambitious reform of employment protection concerning permanent contracts (reduction of layoff costs by two third); fourth, the coexistence of temporary and permanent contracts may have negative effects on norms and the workers' morale which have until now been overlooked: employers claim that they cannot keep the best of their temporary workers or renew their contracts if they are in the process of terminating a fraction of their permanent workers, leading to inefficient allocation of talents when skills are heterogeneous. The elimination of temporary contracts may therefore be productivity enhancing in this context.

We finally explore empirically the determinants of the proportion of temporary and permanent workers within firms, including medium and long-term determinants. We show that lower growth increases the demand for temporary contracts. We also find, using empirical tests, that there are complementarities within three types of employment regulations (protection against layoffs for regular jobs for both individual and collective layoffs, and restrictions to the use of temporary contracts).

We conclude that while there are costs to dualism, these costs are not as obvious and well established as the ones triggered by employment protection itself. In terms of political economy, offering workers a more generous unemployment insurance (combined with important incentives to accept job offers and better training) in exchange for reduced employment protection is a better and more transparent way of reforming labour markets than the alternative of converging towards a single labour contract with uncertain gains for workers.

1 Introduction

Many recent policy debates have revolved around the idea of implementing a “single labour contract” which consists in abolishing or limiting the coexistence of several types of contracts (namely, permanent and temporary), sometimes described as labour market dualism. Dualism was initially intended to describe the US labour market in the post-war period (Doeringer and Piore, 1971): primary workers (typically male, skilled, majority) had high-wage jobs, received on-the-job training and faced low turnover, while secondary workers (typically uneducated, females, from a minority) earned low-wages and had high turnover rates. In the European context, dualism describes the situation in which some workers (mostly younger workers) are under temporary contracts and may not easily access regular employment. Temporary contracts can be either fixed-term contracts or interim contracts which are short-term contracts between a firm and an interim firm. Saint-Paul (1996, 2000) extensively discusses the consequences of dualism on wage formation, human capital accumulation and the political economy of labour market reforms.¹

In this paper, we discuss the pros and cons of moving towards a single labour contract, starting from a situation where firms can use a combination of temporary and permanent contracts. Then we review the legal aspects linked to the coexistence of temporary and permanent contracts, in particular the use of temporary contracts to adjust employment in response to cyclical fluctuations, or as a screening process (temporary contracts being assimilated to long probationary period). This leads us to discuss and comment the November 2007 ILO decision regarding the French ‘Contrat Nouvelles Embauches’ (CNE) which served as a stepping stone to the elimination of the contract. It also ultimately led to the decision of the French highest judicial institution (Cour de Cassation) on July First, 2008² to render the CNE contract illegal because the length of the probationary period was deemed contrary to Convention 158.

We then argue that the issue of a single contract cannot be discussed without a model in which the two types of contracts (permanent and fixed term contracts) coexist in equilibrium.³ We elaborate a model of overlapping firms living two periods, which allows us to discuss the determinants of the number of each type of contract. The determinants are: i) the perceived heterogeneity in skills, which favours temporary contracts; ii) the growth rate of the economy which favours permanent contracts; iii) business cycle volatility which favours temporary con-

¹Among the conclusions, one may emphasise that firing costs do increase returns to education at the cost of excluding low-skill workers, that employment protection and dualism in contracts result in a *status quo* bias, and that the extension of temporary contract may be blocked at some point by a majority of insiders.

²Arrêt de la Cour de cassation, Chambre sociale, rendu le 01/07/2008, rejet (07-44124), <http://www.net-iris.fr/veille-juridique/jurisprudence/20063/la-cour-de-cassation-confirme-la-non-conformite-du-cne-a-la-convention-de-oit.php#plan-2>; ILO decision: http://www.ilo.org/wcmsp5/groups/public/—ed_norm/—relconf/documents/meetingdocument/wcms_087583.pdf

³Wasmer (1999) provides a such a search and matching setup where the demand for temporary contracts decreases with productivity growth and even vanishes above a threshold growth rate. A calibration establishes that in a regime of permanent growth above 4.16% a year, there should be no demand for temporary contracts at all.

tracts; iv) firing costs of permanent workers which raise the demand for temporary contracts and v) restrictions to the use of temporary contracts which reduce the demand for temporary contracts. Finally, short-run movements in total factor productivity have an ambiguous effect on the share of temporary contracts: if productivity is low, firms adjust employment using temporary contracts. Above a threshold, productivity unambiguously raises the share of permanent employment. It follows from the analysis that the need to suppress temporary contracts depends on the cyclical context and on economic growth and the net benefits of a single contract may vary substantially, being lower in recessions. A recent article by Cahuc et alii. (2011) also develops a model with the two types of contracts. The authors investigate another aspect of the trade-off between the different types of contracts.⁴ Many more studies along these lines have recently been done.⁵

Next, we assess the consequences of removing temporary contracts. We illustrate some ideas that have been present in the literature but rarely or insufficiently acknowledged in the discussion surrounding the implementation of a single labour contract: first, employment protection has a moderate negative impact on total employment which is actually smaller when temporary contracts provide some flexibility. The elimination of temporary contracts leads to a drop in total employment (by 7 percentage points in our quantitative exercise) and would require a very large reform of employment protection of permanent contracts in order to compensate for the loss of the temporary contracts as an instrument of flexibility (e.g. a decline by two third of the cost of laying off workers).

However, the coexistence of permanent and temporary contracts may have negative effects through norms and incentives which have until now been overlooked: employers claim that they cannot keep the best of their temporary workers or renew their contracts while laying off some of their permanent workers, leading to inefficient allocation of talents when skills are heterogeneous. The elimination of temporary contracts may therefore be productivity enhancing in this context. This can be rationalised either because of a morale effect on other permanent workers, by the cost of breaking implicit contracts, or because of regulations: economic layoffs of permanent workers

⁴Our work differs from Cahuc et alii. (2012) in that the trade-off leading to the coexistence of temporary and permanent workers is different. In their work, temporary workers face higher layoff costs before the end of the temporary contracts than under permanent contracts: it may therefore sometimes be preferable to avoid a temporary contract, even though they can be terminated at no cost at the end of the period of the contract if needed. Their paper therefore focuses on the role of the short-run volatility of labour demand. Our work focuses on a different trade-off: the transformation of a temporary contract into a permanent one is subject to restrictions due to the legal environment or due to the quit behaviour. With heterogeneous workers, it may be preferable to offer a permanent contract in order to keep the best workers. This setup allows us to address a yet unexplored question: the additional costs or legal impossibility of laying off permanent workers not suitable for the job, when at the same time the firm hires in temporary contracts.

⁵The literature on temporary contracts has flourished in Europe. A non-exhaustive list is Alonso-Borrego and alii. (2011), Bentolila and alii. (2010), Berton and Garibaldi (2006), Blanchard and Landier (2002), Cao et alii. (2010), Cahuc and Postel-Vinay (2002), Macho-Stadler and alii. (2011), Portugal and Varejão (2009). Charlot and Malherbet (2012) consider the role of temporary contracts on returns to education and conclude to adverse effects of dualism.

cannot be justified when firms simultaneously hire new workers or retain temporary workers.

The political economy of these arguments imply that permanent employees are unlikely to accept a reform which would implement a single labour contract if it reduced their employment security or if it raised the length of probation periods of permanent contracts. Overall, while there are costs to dualism, these costs are not as obvious and well documented as the ones triggered by employment protection itself. Offering workers a more generous unemployment insurance (combined with important incentives to accept job offers and better training) in exchange for reduced employment protection is a more transparent way of reforming labour markets than converging to a single contract with uncertain gains for workers.

The paper is organised as follows. **Section 2** discusses the various types of contracts available in several countries. **Section 3** discusses the benefits and costs of a 'single contract' reform. **Section 4** develops a model with an endogenous share of temporary and permanent contracts. It then investigates the role of perceived heterogeneity on the optimal mix of temporary contracts. **Section 5** assesses the impact of removing temporary contracts, on employment and on the removal of the implicit norm associated with the coexistence of temporary workers and permanent workers. **Section 6** investigates the long-run effects and notably role of growth on the optimal mix of temporary contracts and tests these effects as well as the role of the sub-components of employment protection. **Section 7** concludes.

2 Overview: the single labour contract

2.1 “How far away are we from a single labour contract?”

2.1.1 Dualism of contracts is rooted in the law

Denmark, France, Germany, Italy and Spain along with most countries of the European Union have a dual labour market: permanent employment coexists with some form of temporary employment. In most countries, jobs are based on written employment contracts. Jobs can be classified into two categories: temporary and permanent. They are considered as temporary if the termination of the employment relation is determined by objective conditions such as reaching a certain date, completion of an assignment or return of another employee who has been temporarily replaced. Jobs are defined as permanent (or open-ended) if there is no explicit agreement on the date of termination. Temporary contracts are essentially divided between fixed term contracts (contracts that directly bind the employer to the employee for a limited amount of time), agency contracts (contracts that use employment agencies or businesses as intermediaries between the worker and the employer: people are engaged by the employment agency and hired out to a third party to carry out a job) and specific training contracts.

The traditional open-ended ‘permanent’ contract is the most common form of employment

contract in the European Union (being held by around 80% of employees⁶). For most countries, these types of contracts were traditionally considered as the ‘regular’ means of employment, temporary contracts being the exception. Some countries, such as Germany, France and Spain, attempt to limit the use of fixed term contracts. In spite of this, the proportion of workers on a temporary contract has risen significantly over the last decades, as seen in figure 18 (in Appendix A): the share of temporary workers in the OECD countries rose steadily by 12 percentage points between 1985 and 2008. In Germany, France and Italy temporary workers accounted for almost 15% of the employed population in 2010 (see Figure 1). The use of temporary jobs has been especially high in the Netherlands and in Spain: they respectively account for 18.5% and 24.9% of the jobs⁷. Some countries such as the United Kingdom (6% in 2010) and Slovenia (5.7% in 2010) have managed to maintain a lower share of temporary employment but few countries have experienced a decrease in the share of temporary contracts in the recent years. There is a noticeable exception: Denmark. Indeed, between 1984 and 2010, the incidence of temporary contracts declined from 32.6% to 25.4% while it increased in almost all OECD countries (Source: OECD 2010).

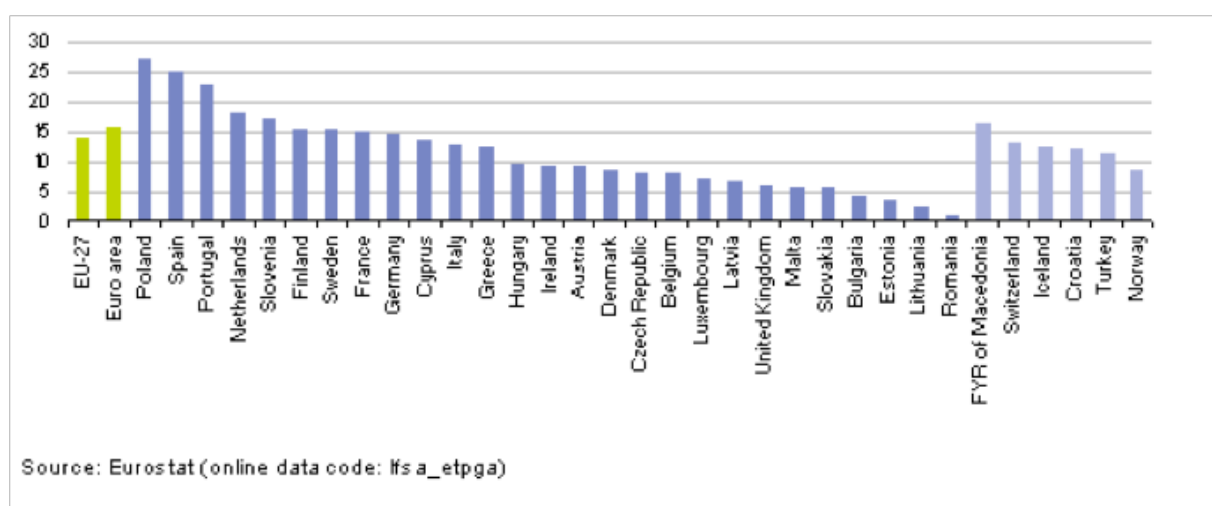


Figure 1: Proportion of employees with a contract of limited duration (% of total employees aged 15 to 64) in 2010

Nonetheless the exact terms of the contracts vary according to the countries in which they are implemented. Employment protection laws are especially country-specific.

⁶Eurofound., «Changes over time: first findings from the 5th European Working conditions' survey,» 2010, <http://www.eurofound.europa.eu/pubdocs/2010/74/en/3/EF1074EN.pdf>

⁷OECD (2010), "Labour Market Statistics: Employment by permanency of the job: incidence", OECD Employment and Labour Market Statistics (database).

2.1.2 The traditional ‘Permanent Contract’

In Denmark, France, Germany, Italy and Spain and the United Kingdom permanent or ‘*open-ended*’ contracts differ in terms of the national Employment Protection Laws. Spain, The Netherlands, Germany and France appear to have the most rigorous EPL of the group for regular contact whereas the United Kingdom, Italy, Denmark and Finland have the more flexible EPL (see Figure 2). It seems difficult to interpret the difference in EPL solely using the differences in the legal systems: even though the United Kingdom (a common law country) has the lowest EPL as could be expected the country with the second lowest degree of EPL is Italy (a civil law country).

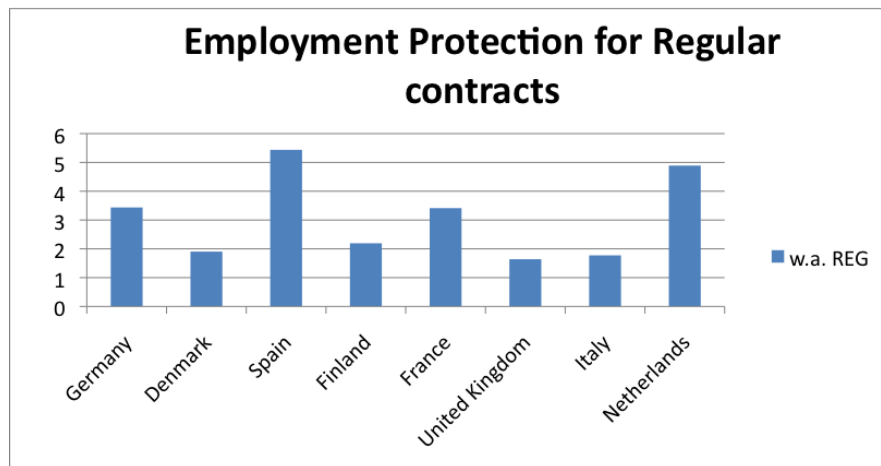


Figure 2: 1998-2008 average of employment protection for regular contracts,

OECD Employment Protection Laws’ Indicators on regular or ‘permanent’ contracts in different countries (w.a. REG). The EPL indicators for a given country and a given year are computed using the weighted average of OECD EPL Indicators for regular contracts, indicators on collective dismissals are not taken into account in this figure (see items 1-8: www.oecd.org/employment/protection).

Most European countries have some procedural requirements for individual dismissals and the countries in the figure above are no exception (see Table 1). On average, Latin countries have more requirements than Anglo-Saxon countries, but they are not necessarily the strictest in terms of the length of notice period. Spain has a very short notice period requirement due to the recent reforms that took place in 2010⁸ whereas Germany has a much longer notice period that can stretch up to 5 months if a worker has more than 10 years of tenure. The United Kingdom appears to be the country with the most flexible requirements on average; it is also the only common law country among the selected group. See Box 1 for a discussion of federal countries and common law countries.

⁸Act 35/2010

BOX 1: SOME LIMITATIONS OF EPL INDICATORS FOR REGULAR CONTRACTS

- For federal countries the EPL indicators are computed by taking the average employment protection of the biggest states, this can give a relatively imprecise result since labour laws within a country may vary substantially across the different states. The United States, despite essentially relying the ‘at will’ employment doctrine, has some employment protection guarantees (see section 3.1.1): some come from federal laws, some from state laws and some from case laws (which can vary across states). In Montana for instance, The Montana Wrongful Discharge From Employment Act of 1987 (WDEA) prohibits discharge for other than good cause after a designated probationary period and gives the employee the right to challenge a termination in court or before an arbitrator. The statute also limits damages to up to four years of lost wages, including the value of fringe benefits, with interests. Although similar legislation has been introduced elsewhere, Montana is so far the only state to have passed a law with such far-reaching effects.
- There is a risk that they may underestimate the rigidity of the employment protection in certain common-law countries, especially the United States. It is indeed difficult to take into account case law, as opposed to the written laws of a country, even though the OECD indicators attempt to reflect the former as well as the latter such as in the case of the score for reinstatement after layoff (the score is the same - 0.5 - in the United States and in France, for instance, despite very dissimilar written laws).
- It could be interesting to include some measure of litigation costs in the EPL indicators. In countries where wrongful termination lawsuits are very frequent and the rulings are relatively generous towards the employees, firms may be just as limited in their termination decisions *de facto* as countries with high employment protection laws. See later on the Box 6 for the costs and delays of litigations.

Table 1: Employment protection: strictness

	Notification to worker	Notice period	Pay in lieu of Notice	Outside Approval	Outside notification
Denmark	written	1m<6mw & 3m>6mw max 6m	No	No	No
France	written	6mw>1m<2yrw 2m>2yrw	Yes	No	No
Germany	written	1m<2yrw 2yrw>2m>5yrw 5yrw>3m<8yrw 8yrw>4m<10yrw 10yrw>5m<12yrw	No	No	Worker's representatives
Italy	written	No severance pay as such. However there is an end-of-employment contract indemnity	Yes	No	No
Spain	written	15 days	Yes	No	No
UK	No specific form	1mw<1w<2yw then 1 week/year worked (max 12weeks)	No	No	No

Individual dismissal requirements. For the Notice Period column, 'mw' and 'yrw' are seniority indicators and respectively correspond to "months worked" and "years worked" while 'w', 'm' correspond to the duration of the notice period, respectively "weeks" and "months". In the case of Denmark for example a worker who has worked for less than 6 months in a given job will have a notice period of 1 month; the notice period of a worker with more than 6 months of work will be of 3 months; no matter the seniority of the worker, the notice period will not exceed 6 months (ILO EPLex database).

On average, EPL in these European countries is high compared to other OECD members. This induces a relative rigidity of the 'permanent' labour market: employers are limited in their termination decisions and can bear important costs when they decide to terminate a contract. This lack of flexibility regarding employment actions is usually given as the underlying reason for the recent surge in temporary contracts and more specifically fixed term contracts. Employers are less willing to hire workers under permanent contracts, because they know that if they face adverse economic conditions in the future, it will be more costly to decrease production by laying offworkers. Anticipating a negative shock, employers might therefore prefer to offer temporary contracts that bind them to workers for a limited time, even in a more prosperous period. The current situation of increased financial instability and insecurity might have reinforced this phenomenon by making employers more risk averse.

2.1.3 The most common fixed term contracts

Some countries also have rigid EPL governing temporary employment, which may have limited the use of fixed term contracts.

In Italy, the most common fixed term contract, ‘contratto a termine’⁹ has a maximum duration of 3 years. Workers under such contracts can either work full time or part time. The ‘*contratto a termine*’ can only be renewed once and the duration of the renewed contract cannot exceed that of the original contract and the total length of employment must be inferior to 3 years. A worker engaged in such a contract benefits from the same social rights as any other worker in accordance with the national collective contract.

In France the ‘*Contrat à Durée Déterminée (CDD)*’, the most common form of temporary contract is strictly regulated by the French Labour Code. First, employers can only use a CDD in specific situations¹⁰. A CDD can be offered in the case of the replacement of a worker, who is either absent, on leave following the suspension of his contract, on temporary part time or who is set to arrive at a future date. This contract can also be used in the situation of a temporary productivity increase of a firm, for seasonal jobs and for the replacement of the head of a company¹¹. Second, CDDs are also regulated in their duration: they cannot exceed 18 months¹² and the maximum number of successive CDD that a worker can engage in is set to two. For skilled workers, a more flexible contract was introduced in 2008 in the “Loi de Modernisation du Travail”: in the “CDD à objet défini”, engineers and executives (“cadres” in French) can benefit from a contract between 18 months and 36 months. However, it is important to stress that this strict regulation of temporary contracts can be and is in practice circumvented by some employers through more or less illegal means. For instance, in order to avoid hiring a worker under a permanent contract, an employer can state that the task at hand is the result of a temporary surge in productivity when in reality the job in question requires a permanent full time worker.

In Spain there are three major fixed term contracts ‘*contrato de obras y servicios*’, ‘*contrato eventual*’ and ‘*contrato de interinidad*’. The overall duration of temporary contracts has been limited by law to a total of 24 months, however it appears that the law can easily be bent: contracts for which workers have been hired to perform certain tasks or service can be extended if it is proven that the task requires more than 24 months of labour and redefining the job has been legally sufficient to circumvent the time limit. The contract ‘*contrato de obras y servicios*’ for which the worker is hired to undertake an autonomous and specifically delimited project

⁹<http://www.mfe.org/index.php/Portails-Pays/Italie/Emploi-stage/Reglementation-du-travail>

¹⁰Article L1242-2 du Code du Travail Modifié par Ordonnance n°2010-462 du 6 mai 2010

¹¹There are nine specific cases: for replacing an employee who is absent or temporarily working part time, to temporarily replace an employee whose job is either going to be suppressed or filled by another permanent worker and for temporary increases in the firm’s activity, seasonal activities and jobs in certain sectors (forestry, naval, entertainment, teaching, survey-making, professional sports...)

¹²24 months if the contract was done abroad or in order to deliver an exceptional export order; or when the job is suppressed and in this case an approval from the employees representatives is needed.

or to provide service the execution of which, although limited, is of uncertain duration. The ‘*contrato eventual*’ is concluded when business demands are high and resources are stretched or when there is backlog, even though the work may be within the normal activity of the enterprise. This specific type of fixed term contract cannot exceed 6 months within a twelve-month period. Finally a worker can engage in a ‘*contrato de interinidad*’ when he is substituting a worker entitled to return to work after leave.

In Germany, there are two types of fixed term contracts: fixed term contracts for which ‘*objective and material grounds*’ are required; and fixed term contracts without objective grounds. A fixed term contract based on ‘*objective and material grounds*’ can be renewed without limitation. Objective and material reasons are not required for the conclusion of a contract for a term not exceeding 2 years. Within this time frame, the contract can be renewed 3 times¹³. For newly founded enterprises, this time limit is up to 4 years. Similarly ‘objective and material’ reasons are not required for workers aged 52 and over.

In Denmark, a fixed term contract can be concluded provided that it follows “*objective criteria such as reaching a specific date, completing a specific task or the occurrence of a specific event*”¹⁴; however, unlike France, Germany, Spain or Italy there are no limitations to the maximum number of successive fixed term contracts (except in certain sectors such as teaching and scientific work where they are limited to two). Apart from standard terms of notice, fixed-term workers are generally covered by the same collective agreements and by the same legislation as permanent employees (e.g. holidays, seniority, salary during sickness etc.). Since 2003, the law on fixed-term contracts (Lov om Tidsbegrænsede Ansættelser which comes from the EU directive of 1999 on fixed term contracts) covers all fixed-term workers. The main objective of the law is to improve the quality of fixed-term contracts by ensuring that fixed-term workers have the same possibilities and rights as employees in standard contracts. Another important objective of the law is to protect the fixed-term workers against employers’ improper use of successive renewals. Therefore a fixed-term contract can only be renewed due to objective conditions such as maternity leave or sickness or because a longer contract is needed in order to complete the task.

In the United Kingdom contracts are not necessarily written, however employers are required to send a written document to the worker after 2 months on the job (Employment Rights’ Act). There is no limitation to the number of successive short term employments that a worker can have. The Fixed-term Employees Regulations (FTER), in effect since 2002, stipulate that a fixed-term employee shall become a permanent employee after four years of continuous employment under one or successive fixed-term contracts. However, this statutory four-year limit does not apply if

¹³ sec. 14 (2) PTFTEA

¹⁴Sec. 1 (4) ESEA

employment on a fixed-term contract can be justified on objective grounds, or if the period of four years has been lengthened under a collective or workplace agreement. Unlike France, Spain, Italy or Germany, there are no restrictions to the use of fixed term contracts in the United Kingdom. In the Netherlands, similarly to the United Kingdom, there are no limitations to the uses of fixed term contracts: no specific reasons are required. Nonetheless, fixed term contracts are limited to 3 and cannot exceed 36 months. A fourth renewal or a renewal exceeding a total period of 3 years will alter the fixed-term contract automatically into an open-ended contract. The number of renewals and/or the duration can be changed by collective agreements.

Figure 3 highlights the differences in limitations to the use of fixed term contract: France has the most limitations closely followed by Finland, Spain, Denmark and Italy while Germany and the Netherlands are much more flexible in their use of the FTC and the United Kingdom is the most flexible of the lot (excluding the USA as at-will employment dominates and cannot be compared to the fixed term contracts used in the other countries). See also Boxes 2 and 3 for a specific focus on Denmark and the Netherlands.

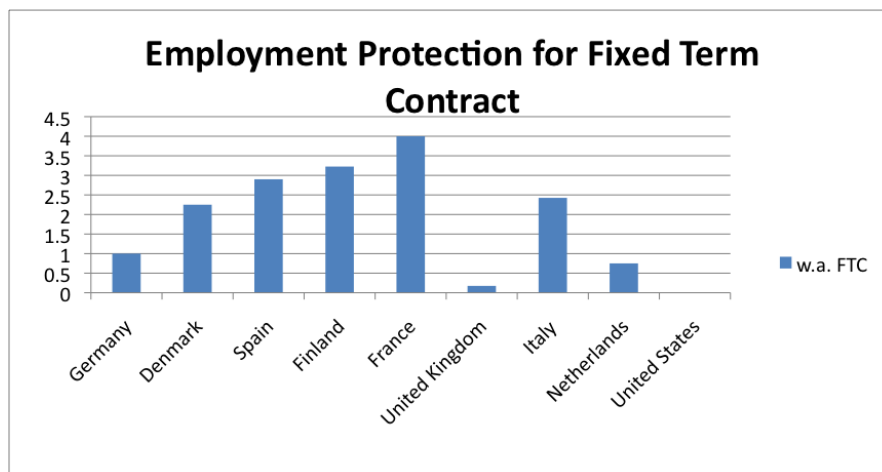


Figure 3: 1998-2008 average employment protection for fixed term contracts, which reflects the stringency of restrictions against temporary/fixed term contracts (maximum duration, maximum number of renewals and number of valid cases for use)

OECD Employment Protection Laws' Indicators on fixed term contracts in different countries (w.a. FTC). The EPL indicators for a given country and a given year are computed using the weighted average (w.a.) of OECD EPL Indicators for FTC, indicators on temporary work agency are not used in this figure (see items 10-12: www.oecd.org/employment/protection). The 2012 reforms in Italy and Spain are discussed in Section 2.2.2.

Most OECD countries and especially those studied in this paper have legally accepted forms of temporary employment along with permanent employment. Moreover the recent labour market statistics suggest that countries are *de facto* moving further and further away from a single labour market. Yet more and more labour market specialists are pushing for the destruction of

the duality of the labour market through the implementation of a single labour contract.

BOX 2: FOCUS ON DENMARK

(Source: http://ec.europa.eu/economy_finance/db_indicators/labref/pdf/denmark_en.pdf)

In Denmark the overall level of EPL is low. It is particularly modest for both regular contracts and fixed term contracts (especially compared with the rest of the European Union and France in particular) while the degree of protection regarding collective dismissals is of the same order of magnitude. Nonetheless, the number of workers under permanent contracts remains quite high (90% of the employed population are engaged in an open-ended contract) *“The modest EPL dates back to the September Compromise of 1899, the system of unemployment benefit dates back to the late 1960s and active labour market policies go back to the 1993-94 labour market reforms”*.

The low EPL indicators stem from Denmark’s well known flexicurity system characterised by three important pillars: *“flexible contractual arrangements”* (i.e. the majority of the workforce is easy to dismiss and there are high job mobility and job turnover rates: about 25-35% of the workforce even high-ranking employees change employers each year), *“high social protection including strong income support”* (unemployment and other social benefits) during job transitions, *“strong active labour market policies”* granting rights and giving obligations for the unemployed coupled with training policies.

Existing legislation tends to apply to white-collar workers while blue-collar workers are mostly protected through collective branch agreements. In order to dismiss a white collar worker, a written notice of dismissal is required and must be given the first day of the month and the notice delay *“counts from the 1st day of the month following the receipt of the notice”*. White-collar workers can request immediate negotiation with the union and the notice period goes from 2 weeks to 6 months depending on the length of the job tenure. For blue-collar workers *“collective agreements contain a provision for written notice with reason for dismissal”* there are also negotiation provisions if the employee finds the dismissal unfair. Dismissals will be considered as collective if the number of dismissed employees is greater than or equal to 9 for firms that have 21 to 99 workers. For companies that have 100 to 299 workers, collective dismissals correspond to the dismissal of more than 9% of the total number of employees and for companies that have more than 300 workers, a dismissal will be viewed as collective in nature if it reaches 29 workers or more. In addition to individual notification the company must notify the Regional Employment Council. An additional 30 days delay after notice is given. Firms with up to 20 employees are exempted from requirements for collective dismissals.

BOX 3: FOCUS ON THE NETHERLANDS

(Source: http://ec.europa.eu/economy_finance/db_indicators/labref/pdf/netherlands_en.pdf)

The Netherlands' EPL indicator is one of the highest in the EU for regular contracts. This is "*mainly due to high procedural inconveniences and difficulty of dismissals for regular contracts*". In turn, the EPL indicator for restrictions against temporary/fixed term contracts is quite low (see figure 3). Dismissal procedures can occur through two channels. First, in the case of a unilateral termination decision, the private sector employer can require prior permission from the Centre for Work and Income (CWI), a public administrative body. This procedure acts as a "*preventive check to determine the reasonableness of any intended dismissal*". This procedure is less onerous but much longer than its alternative which is for both employees and employers to request a local court to "*dissolve the employment contract for important reasons*". . . . In the first case employers are faced with long notice periods (from one to three months, depending on the tenure of the employee) and a more "*bureaucratic and time-consuming dismissal*" procedure, the alternative route is faster, but also more expensive as firms are faced with much higher severance pay obligations, especially for long job tenures (from 6 up to 35 months for job tenure of 20 years).

Severance payments are tenure dependent. The trial period "*- i.e. the period within which, regular contracts are not fully covered by employment protection provisions and unfair dismissals cannot usually be made*" is of 1 month for contracts of up to 2 years; 2 months for contract with more than 2 years duration. The option of reinstatement is rarely made available to the employee. "*Notwithstanding court rulings, employers in practice can choose to replace reinstatement in the previous job by payment of compensation. The amount of compensation is governed by the application of a regular severance pay formula.*" Dismissals will be considered as collective when one employer in the same region has dismissed at least 20 workers over a period of three months. In this case, the employer must provide data on the financial state of the company, prove that alternatives to redundancy have been considered, and justify the selection of dismissed employees. The employer must inform and consult with work council and trade union delegates on "*alternatives to redundancy and ways to mitigate the effects and notify the competent regional employment office. A social plan will normally be agreed outlining transfers, re-training, early retirement measures and financial compensation. While there is no legal entitlement to severance pay in case of collective dismissal, social plans often contain severance pay or top-ups to unemployment benefits.*"

2.2 How to evolve towards a single contract?

2.2.1 Proposals for eliminating dualism

There are theoretically different ways of evolving towards a single employment labour market. The first possibility consists in removing all forms of temporary contracts from the labour system and keeping the traditional permanent or '*open-ended*' contracts as they are. This solution requires firms to adapt their strategies. In the absence of temporary contracts, they would lose one margin of adjustment.

A second possibility consists in replacing all existing contracts by one single contract that would be somewhere in between the traditional permanent contract and the fixed term contract. The advocates of this solution are quite numerous (especially among lawyers and economists) with two variants: some argue that this single labour contract should replace all existing forms of employment contracts (the ‘pure’ single employment school of thought); others plead in favour of a single labour contract only replacing the two dominant forms of contracts (fixed term contracts and permanent contracts) without affecting smaller more specific employment contracts such as agency or interim contracts (Andrés et alii. 2009) and training contracts, the ‘extended’ single labour contract school of thought. Among those; some plead in favour of an ‘extended trial period’ while some others call for ‘reduced dismissal requirements’. Both should lead to greater flexibility for employers while limiting the increase in job insecurity for workers through the introduction of a new regulation of the labour market. For instance, in the ‘extended trial period’ proposal, the single labour contract would have two periods: a probationary period during which employers would be granted more flexibility in terms of dismissal requirements, and a normal permanent period, securing workers that would otherwise have been hired under a temporary contract.

In the ‘reduced dismissal requirements’ proposal, the idea is to extend the number of motives for termination of the regular employment contract, and in particular incorporate the legal justifications for the current use of fixed term contracts (such as the replacement of a worker and seasonal activity). In other words a single labour contract could be terminated if both parties had previously agreed upon the duration of the contract and if the reason given was legally acceptable (Gleize, 2011, see Box 4). Cahuc and Kramarz (2004) advocate for the introduction of a permanent contract without the collective layoff regulations (e.g. the current compulsory redeployment requirements). Redeployment of the fired workers would be the responsibility of the public employment service, not the firm. In compensation, firms would have to pay a ‘*termination tax*’. Interim contracts would still exist to give companies the necessary leeway to handle job turnover.

The single labour contract would include severance pay - a transfer to workers - that increases with seniority to all new hires (Andrés et alii, 2009). Generally speaking, the main logic of employment protection is to compensate workers for specialising in skills that are specific to the firm or the occupation. Since this specialisation increases with seniority, severance payments should also increase with seniority. We discuss this specific point in the conclusion.

BOX 4: A PERMANENT CONTRACT FOR ALL?^a.

Céline Gleize advocates the destruction of temporary contracts. A more flexible form of the CDI would unilaterally replace them. It would include a new legal motive for termination that would correspond de facto to the reasons for which a company might favour a fixed term contract (replacement of a worker on leave, temporary increase in productivity, seasonal activity...). Nonetheless, to protect workers, in order to terminate a contract using the same legal motives as the current CDD, employers would need to follow the same termination requirements as those required by law for the dismissal of a permanent worker (letter of notice, preliminary meeting with the employer...). The termination of the contract would also necessarily give right to a job insecurity allowance (“prime de précarité”) equal to 20% of the wages perceived by the worker since the beginning of the contract. In order to encourage employers to keep the ex ‘fixed term’ worker, the new permanent contract would be made less rigid. Both parts could renegotiate this new CDI regarding decisions that were made at the branch level, thus limiting the rigidity of the old CDI (it cannot be renegotiated) while still protecting the worker as some aspects of the initial contract would remain intangible (such as the fixed portion of the wage). Therefore the new permanent contract would be composed of a rigid, intangible part (the core agreements of the contract) and a modifiable part that could be re-negotiated after the initial contract was signed.

^aCeline Gleize, «Un CDI pour tous», Etudes, Institut Montaigne (2011)

2.2.2 Implementation: the history of recent experiences

With the persistence of high unemployment rates, more and more countries have implemented reforms to induce more flexibility in their permanent contracts.¹⁵ These could be associated as first steps in the process towards the implementation of a single labour contract.

In August 2005, the French government introduced a new employment contract named “Contrat Nouvelle Embauche” (CNE) for workers hired by companies of at most 20 workers. This contract, although open-ended, gave employers more leeway, in terms of termination decisions, for the first couple of years than the traditional permanent contract. During the first two years that followed the signing of the contract, employers were not required to justify their termination decisions and workers could decide to quit their job without being required to give notice. In the case of termination of the contract the reform stipulated that the worker be granted a severance payment equal to 8% of the salary earned since the beginning of the contract. Following the CNE reform, the French government also passed the ‘first employment contract’ (CPE) reform

¹⁵In theory, a greater flexibility in contracts eases hires, with ambiguous effects of total employment but positive effects of employment of women. See e.g. Di Tella and Mc Culloch (2005). There is also evidence on a negative effect of EPL on productivity (see Bassanini et alii. 2012 for a systematic exploration using a Rajan-Zingales identification strategy). There is also some evidence of an ambiguous effect of EPL on the capital labour ratio: the effect may be positive for low values of EPL and negative at higher values (see the references and some theoretical background in Janiak and Wasmer 2012). EPL may finally have a positive effect of specific skills investments (Wasmer 2006).

in April 2006, this reform sought to generalise the CNE reform so that it could be used by companies of 20 or more employees to hire workers under the age of 26. However, both reforms were overturned: the CNE for legal reasons (see subsection 2.2.3) and the CPE after protests and fierce opposition by employees' unions. in March 2006.

In Italy, in February 2012, the government launched a reform in order to curb the duality of the labour market. The first part of the reform was aimed at rationalising the different types of employment contracts: the forty different types of legal employment contracts will be brought down to eight. The second part of the reform focused on the implementation of a new open-ended contract that would replace the current permanent contract. This new contract would have a three-year trial period during which employers would have the right to terminate the contract. However, following these three years, employers would be required to employ the workers permanently. The reform was adopted in July 2012 although some aspects have now been abandoned. The reform adopted instead focusses on extending the maximum duration of temporary contracts (up to 36 months) but makes them more costly, favours apprenticeship for young workers while providing incentives for confirming the apprentices into permanent contracts, and slightly eases firing restrictions in large and medium sized firms ¹⁶.

The Spanish government proposed in March 2012 a drastic reform of the labour market to reduce the duality of the Spanish labour market by introducing more flexibility in the permanent contract while limiting the use of temporary contracts. The reform creates a new open-ended contract for small and medium companies (less than 50 workers) and independent workers. This contract has the particularity of having a probationary period of one year. Employers using this contract would also benefit from tax breaks if they hired either workers below the age of 30 or workers having faced a long registered unemployment spell. The reform also clarified the legal clauses under which 'termination for economic reasons' could be used to reduce red tape costs and is considered as a reduction in the cost of employment protection¹⁷. Finally it restricted the use of fixed term contracts, limiting their maximum duration to 24 months.

Several countries have undergone reforms to reduce the duality of the labour market. Most of these reforms aim at tackling the rigidity of the traditional permanent contract, making it more flexible and giving more leeway to employers in terms of termination decisions. However, it is not sufficient that these reforms be backed politically. They must also comply with the legal norms of each country.

¹⁶<http://www.lexology.com/library/detail.aspx?g=9ab9c7b6-ba7b-4b3e-8a75-cae72bdad0aa>

¹⁷<http://blogs.lse.ac.uk/europpblog/2012/04/23/the-reform-of-the-spanish-labour-market-is-politically-costly-and-will-only-bring-minor-economic-changes/>

2.2.3 Legal obstacles

International barriers

In 1985, the ILO Termination of Employment Convention also known as Convention 158 came into force; 34 countries, among which very few Western European countries (Finland, France, Portugal, Spain, Sweden and Luxembourg), have ratified it¹⁸. This convention that aims at insuring a certain degree of employment security can be considered as an important barrier to the implementation of a single labour contract, as it compels the ratifying countries to follow a number of employment protection clauses. *Article 4* of the convention, considered as “the cornerstone of the Convention’s provisions”¹⁹ establishes the need to base termination of employment on a ‘valid’ reason. It requires that the reason given be connected with either the capacity of the worker, the conduct of the worker or the operational requirements of the undertaking, establishment or service. *Article 11* of the convention provides that, unless an employee is guilty of serious misconduct, a worker whose employment is terminated shall be entitled to a “*reasonable period of notice, or compensation in lieu thereof*”²⁰. The Convention serves to lay out standards of procedural fairness in cases of termination of employment and therefore includes procedures to be applied prior to or at the time of termination (*article 7*), procedures of appeal against termination (*articles 8 and 9*) and procedures regarding workers’ entitlements upon termination (*article 12*). The Convention also establishes supplementary provisions to be applied in respect to termination of employment for economic, technological, structural or similar reasons (*articles 13 and 14*).

The convention 158 provides some prohibitions. *Article 5* gives a non-exhaustive list of reasons which would not constitute a valid reason for termination such as union membership, seeking office as, or acting or having acted in the capacity of a worker’s representative, the filing of a complaint against an employer, race, colour, sex and absence from work during maternity leave. *Article 6* provides that a “temporary absence from work because of illness or injury shall not constitute a valid reason for termination”²¹.

¹⁸The complete list of countries that have ratified the convention is: Antigua and Barbuda, Australia, Bosnia and Herzegovina, Brazil, Cameroon, Central African Republic, Democratic Republic of the Congo, Cyprus, Ethiopia, Finland, France, Gabon, Latvia, Lesotho, Luxembourg, the former Yugoslav Republic of Macedonia, Malawi, Republic of Moldova, Montenegro, Morocco, Namibia, Niger, Papua New Guinea, Portugal, Saint Lucia, Serbia, Slovakia, Slovenia, Spain, Sweden, Turkey, Uganda, Ukraine, Bolivarian Republic of Venezuela, Yemen and Zambia.

¹⁹

ILO, «Note on Convention n°158 and Recommendation n°166 » 2009, http://www.ilo.org/wcmsp5/groups/public/@ed_norm/@normes/documents/meetingdocument/wcms_100768.pdf

²⁰

ILO, «Note on Convention n°158 and Recommendation n°166»

²¹see <http://www.ilo.org/ilolex/cgi-lex/convdf.pl?C158>

Nonetheless, the Convention 158 allows for a certain degree of flexibility to the ratifying states as to the manner in which the obligations are implemented at the national level. *Article 1* states that “the provisions of the Convention shall, in so far as they are not otherwise made effective by means of collective agreements, arbitration awards or court decisions or in such other manner as may be consistent with national practice, be given effect by laws”²². *Article 2* also gives some leeway to states as it offers them the option of excluding certain types of category of workers on the basis of the nature of the contract of employment (workers engaged under a contract of employment for a specified period of time or a specified task, workers serving a period of probation or a qualifying period of employment, determined in advance and of a reasonable duration and workers engaged on a casual basis for a short period) or the category of workers concerned.

The Convention compels ratifying states to follow a certain number of rules in terms of employment protection and in that sense it may, in some cases, be in contradiction with the implementation of a single labour contract. This is especially the case when the single labour contract is viewed as a more flexible (with regards to termination clauses) permanent contract. If article 2 is insufficient to allow a ratifying country of implementing a new contract then member states may denounce the convention. A denunciation is possible only at certain times (usually during one year within a ten year interval). Brazil is the only country to have denounced Convention 158 (in 1996). The Government of Brazil stated that it had taken the decision to denounce the Convention due to legal and economic complexities unforeseen at the time of the ratification. It argued that the convention could on the one hand be “invoked to justify excessive and indiscriminate dismissals”²³ due to the vagueness of article 4 or on the other hand “give way to broad prohibition of dismissals” which would not be compatible with the program of economic social reform and modernisation in force at the time. Moreover the Brazilian government stressed the fact that the convention constituted a “step back in the course towards less state intervention and more collective bargaining”²⁴. In February 2008, President Lula da Silva submitted Convention No. 158 to the National Congress for ratification. In July 2008, the Foreign Affairs Committee of the National Congress voted against ratification. The issue was forwarded for examination by the Labour Committee of the National Congress.

National factors and risk of the status quo

International conventions are not the only form of legal barriers to the implementation of a single labour contract. The national labour codes of a country can also limit or even prevent the introduction of new employment contracts.

²²see <http://www.ilo.org/ilolex/cgi-lex/convdf.pl?C158>

²³Report of the committee of experts on the application of Conventions and REcommendations, Report III, Part 1A, 85th Session 1997, ILO, Geneva.

²⁴Report of the committee of experts on the application of Conventions and REcommendations, Report III, Part 1A, 85th Session 1997, ILO, Geneva.

In countries such as France, Germany, Spain and Italy, the labour codes expressively state the conditions in which a temporary contract can be used. Some of these rules are more rigid than others. In France for example a fixed term contract can only be used in specific cases as discussed above. Therefore, the single labour contract requires both a change in the regulation of temporary contract (with a broader use of such a contract) and possibly (see the discussion in next Section) an important reform of employment protection of temporary contract, requiring deep modifications of the French ‘Code du Travail’. Likewise in Spain a fixed term contract can only be used for objective reasons (specific work, accumulation of tasks, replacement...), for training, to hire disabled workers and to cover the part of the working day left uncovered by an employee close to retirement.

Moreover, the national labour codes can also be very rigid in terms of procedures related to the termination of a permanent employment contract. This can also be a barrier, especially when most single labour contracts described in theory require more flexible termination clauses. In France for example individual and collective dismissals are highly protected by the law. There are only two legally accepted forms of individual dismissals: dismissal for personal motive and dismissal for economic motives. Dismissal for personal motive must be based on a precise, serious and verifiable offense, which must be important enough to justify termination of the employment contract. Dismissal for economic motives must rely on causes that are not linked to the workers. In both cases, the employer is also bound by a series of procedural rules such as receiving the worker for a preliminary discussion on the matter, sending the notification letter, notifying the administration (in the case of an economic based termination), considering alternatives to dismissal (transfers, retraining...) and finally giving priority rules for re-employment. Collective dismissals are assimilated to dismissals for economic reasons: if dismissals are collective, they are necessarily economic. The French labour Code distinguishes two types of collective dismissals: those concerning less than 10 employees over a 30-day period²⁵, those concerning 10 or more employees over a 30-day period²⁶ both require the following of a very consequent termination procedure on the part of the employer. The latter must consult with trade union’s prior to the dismissal, must notify the public administration and the worker’s representatives; he must get the approval of the administration, consider the worker’s condition when making the dismissal decision (family responsibilities, length of service, social considerations and skills), and in firms above 50 employees, consider alternatives to dismissal (general retraining and redeployment obligation stated in the mandatory “employment safeguard plan”); and must give priority to these workers in the case of a re-employment decision. The requirements for dismissals are relatively similar in Italy and Spain especially regarding collective dismissals. In Italy however the employer does not need the approval by the public administration or the worker’s representatives. In Spain the ‘Worker’s Statute’ and the ‘Labour Procedure Law’ do not give priority rules for

²⁵art. L 1233-8 to L 1233-10

²⁶art. L 1233-28 to L 1233-33 LC

re-employment.

In Appendix C, we further develop the experience of the French reform of the Contrat Nouvelle Embauche (CNE) of 2005, as an illustration of the legal difficulties associated with labour reforms.

3 Is it really worth all the trouble? The economic and social costs of dualism

In this Section, we review the arguments in favour of a single labour contract. We dissociate the issue of eliminating (or making more costly) temporary contracts and issues of reforming regular contracts, in particular reducing the degree of employment protection of such contract. In particular, we will discuss whether dualism has high costs compared to the costs of employment protection, and whether these costs are due, more simply, to high employment protection of permanent contracts independently of the existence of non-standard forms of employment.

This issue of the multiplicity of the targets addressed by the single labour contract has sometimes generated doubts about its necessity. In the specific context of France where labour market dualism is relatively more important than in other European countries, Barthélémy et alii. (2006) argued that fixed duration contracts are a way for firms to adjust to their economic environment. Independently of the cost of layoffs for permanent contracts, there is a demand for temporary contracts. The demand for labour is volatile and various contractual arrangements are a way for the firm to adjust. Note however that a single employment contract would not prevent adjustment either; it is simply an independent issue. As put - rather ironically- by the authors, there are also many contractual arrangements in business life, many types of firms and no demand of a simplification and convergence to a single type of firm. The authors therefore claimed in their conclusion that “*The single contract is orthogonal to the solutions needed to adapt and improve French labour laws.*” We will list here some of the potential arguments in favour and against the single contract. The main arguments in favour of a single employment contract are centred on the existence of large costs of dualism, which is the coexistence of temporary and permanent contracts. In this Section, we review the potential costs of dualism and discuss them. The main message of this Section is that the replacement of permanent and temporary contracts by a new contract may eliminate some costs of dualism but not all.

The previous Section has shown that the different proposals in favour of a single labour contract have several dimensions. One is whether the reform fully eliminates the temporary contracts or not. A second one is the extent to which the regular contract is deeply modified or not. In particular, some of the reforms involve contracts with (continuous) progressive seniority rights (CPSR); while some of the reforms involve contracts with large probationary periods (CLPP); both aspects may finally be combined to various extent.

In particular, under both CPSR and CLPP, workers with low seniority and low protection would still coexist with workers with high seniority and more protection. The CPSR will eliminate

discontinuities in the degree of employment protection, may or may not reduce the stigma effect associated with being in a temporary contract, and finally change workers' expectations about their own employment perspectives. Indeed, both a temporary contract and a single labour contract with low protection under low seniority play the same role: they allow the firm to respond to temporary labour demand conditions and screen workers. Under a temporary contract, the default is non-renewal and workers under such contracts will undertake some effort to find another job. Under a single employment contract, the default is renewal, leading to a negative surprise (misperception) for newly hired workers and possibly litigations and appeal. The CLPP will not eliminate discontinuities, workers laid-off within the extended probation period, will still suffer from stigmas, with or without change on worker's misperceptions (depending on how they perceive the role of the probation period), and will help employers screen workers. It will however not reduce dualism.

3.1 Dualism is often considered to increase inequality among workers

Regardless of the composition of the labour force, the fracture between temporary and permanent contracts necessarily creates a divide in the labour market. Having two distinct forms of employment (one much more favourable than the other) makes visible the existence of duality in the labour market. It also gives employers the tools to legally discriminate between different groups of workers based on demographics or skills. Workers with permanent jobs develop stable working habits, their wages are relatively high²⁷, and they are highly protected in the case of a dismissal.

In other words, permanent jobs bear many similarities to what the dual labour market theory semantics call 'primary jobs' (Doeringer and Piore, 1971, Reich, Gordon and Edwards, 1973). Workers with temporary contracts, like those in 'secondary jobs', have lower wages, experience higher turnover rates and very little career advancement. The differential in contractual forms triggers a legal gap in terms of employment conditions and is thus a factor of inequality among workers. The type of contract determines the expected duration of employment spells and in particular the layoff probability in an economic downturn (Cahuc and Kramarz, 2004). Workers with a permanent contract, regardless of their individual characteristics or productivity levels, are much more likely to remain employed than temporary workers, as employers will choose not to renew temporary contracts when facing a bad shock.

However, the existence of unequal access to stable jobs is not a specificity of the coexistence of several types of contracts. The coexistence of several contracts makes dualism more visible and the fact that these contracts stem from written laws would act like an implicit approval of dualism by the governments and thus roots dualism at the core of the labour market of countries in which these contracts co-exist. In the United States where dualism in contracts historically

²⁷The theory of compensating differentials predicts that, everything else controlled for and notably productivity, their wage should be lower given greater employment stability.

did not exist, a large amount of empirical studies shed light on persistent divisions by race, sex, educational credentials, industry grouping and so forth (for an old literature, see Harrison 1972, Nackenoff 1983, Hudson 2007) among US workers. These groups “seem to operate in different labour markets, with different working conditions, different promotional opportunities, different wages and different market institutions”. (Reigh, Gordon and Edwards, 1973).

A question is therefore to try and understand whether the elimination of temporary contracts is enough to reduce the turnover of young workers with low seniority rights in a temporary contract, and whether some categories of workers (unskilled, youngsters, women) may get access to high seniority even after the removal of all temporary contracts. To the best of our knowledge, this still has to be demonstrated. A few reasons for doubting about the elimination of dualism with single contracts are developed below.

The existence of high EPL in permanent contracts affects productivity negatively and slows down employment reallocation, as argued before. Therefore, we must also question whether the single labour contract is the best way to reform employment protection of regular contracts.

3.1.1 The particular case of ‘at-will’ employment contracts

In the United States, ‘at-will’ is the only form of employment; yet segmentation of the labour force remains. Indeed, contrary to most OECD countries and especially those of civil law descent there are no differentiated legal forms of employment that keep the fracture between temporary and permanent employment open. Employment relationships are presumed to be ‘*at-will*’ in all U.S. states except Montana. At-will means that an employer can terminate an employee at any time for any reason, except an illegal one, or for no reason, without incurring legal liability. Likewise, an employee is free to leave a job at any time for any or no reason with no adverse legal consequences. Moreover, in an at-will relationship, the employer can change the terms of the employment relationship with no notice and no consequences. “*In its unadulterated form, the United States’ at-will rule leaves employees vulnerable to arbitrary and sudden dismissal, a limited or on-call work schedule depending on the employer’s needs, and unannounced cuts in pay and benefits.*”²⁸. See Box 5.

This system is the same for everyone, it does not favour one part of the labour market more than another per se and all the workers are governed by the same rules. At first glance it would seem that the US ‘at-will’ specificity corresponds to a situation of total job insecurity for everyone. There are however, some means of employment protection which protect all workers, known as “at-will exceptions” which have gained importance over the years: common law exceptions and statutory exceptions (Auto, Donahue and Schwab, 2007). This system can therefore be assimilated to a form of single employment strategy in which all workers face in principle the same amount of job insecurity. Yet de facto, the US labour market, very much like the European

²⁸Source: National Conference of State Legislatures, «The at will presumption and exceptions,» 2012, <<http://www.ncsl.org/issues-research/labor/at-will-employment-overview.aspx>>.

labour market remains fragmented, especially given the widespread use of seniority rules. See Box 6.

Box 5: 'AT-WILL' EXCEPTIONS

There are common law exceptions to the at-will presumption that have been made by the courts and that mitigate its consequences. The most widely recognised common law exception to the at-will presumption protects employees against adverse employment actions that violate a public interest. The public policy exception is comprised of four categories: refusing to perform an act that the state law prohibits, reporting a violation of the law, engaging in acts that are in the public interest, exercising a statutory right. Another largely accepted exception to the at will presumption is the implied contract exception: “*an agreement ‘implied in fact’ founded upon a meeting of minds, which, although not embodied in an express contract, is inferred, as a fact, from conduct of the parties showing, in the light of the surrounding circumstances, their tacit understanding^a*”. A minority of states recognise an implied covenant of good faith and fair dealing in employment relationships. Judicial interpretations of this covenant have varied from requiring just cause for termination to prohibiting terminations made in bad faith or motivated by malice. Employees can also use promissory estoppel (“the employer made a clear and unambiguous promise of employment, the employee relied on the promise, the employee’s reliance was reasonable and foreseeable and the employee was injured as a result”^b) and tort-based claims (Intentional interference with a contract and Intentional infliction of emotional distress) to fight their employers’ decision of firing them. However, these last two exceptions are much harder to prove and courts are much less responsive to them.

Finally there are also statutory exceptions to the at-will employment presumption. Federal and state discrimination statutes protect employees from adverse employment actions based on their race, color, religion, sex (ex: Equal pay Act of 1963), national origin, age (ex: Age Discrimination in Employment Act of 1967), disability (ex: American with Disability Act of 1990), or veteran status. Federal and/or state laws prohibit employers from firing employees in retaliation for engaging in legally proper, necessary, or desirable activities such as claiming minimum wage or overtime compensation, engaging in union activities, opposing unlawful discriminatory practices, filing for workers’ compensation, and “*whistle-blowing*”.

^aBaltimore & Ohio R. Co. v. United States - 261 U.S. 592 (1923)

^bSource: National Conference of State Legislatures, «The at will presumption and exceptions,» 2012, <<http://www.ncsl.org/issues-research/labor/at-will-employment-overview.aspx>>.

BOX 6: COMPARISONS ON EMPLOYMENT LITIGATIONS

It is difficult to get an idea of the costs triggered by wrongful termination lawsuits, as there are very few statistics available. Computing a coherent approximation of such costs would require statistics on the average legal fees (lawyers, consulting firms...), on the average duration of the trial, on the likelihood of getting charged and on the amount of the punitive damages incurred by the employer. In the United States, there are no statistics on the total employment cases. The Equal Employment Opportunity Commission (EEOC) which monitors the charges of employment discrimination and resolution under several statutes revealed that in 2011, there were a total of 99 947^a individual charge filings. The number of total individual charge filings has increased by more than 20% over the last ten years. The Annual Workplace Class Action Litigation Report of 2011 reports that the continued economic challenges and low hiring rates during 2010 fueled more class action and collective action litigation. Most significantly, the plaintiffs' bar increased the pace of collective action filings under the Fair Labor Standards Act (FLSA) seeking recovery for unpaid work time and overtime wages. These conditions spawned more employment-related case filings, both by laid-off workers and government enforcement attorneys. The amounts awarded to the plaintiffs in employment trials in the United States vary. According to the EEOC, the monetary benefits recovered out of the 300 suits filed in the federal district courts in 2011 amounted to 91 million dollars. The monetary benefits, or punitive damages, awarded to the plaintiffs in class action suits can be extremely high: the *Velez, et al. v. Novartis Pharmaceuticals Corp.* case led to a settlement of 175 million dollars^b on behalf of the company.

In France, in 2010 there were a total of 217 128 employment litigation cases^c that were brought to trial. Approximately 70%^d of these cases concerned unfair individual dismissal charges. Among these filed charges, 172 044 followed the main procedure ("au fond") and 45 084 were conducted under interim relief procedures ("en référé"). In 2010, the average trial for an employment case lasted 11.1 months. It can be longer: 13.7 months for regular procedures (procédures au fond) or faster: 2 months for interim relief procedures (procédures en référé). 25% of the cases that were resolved in 2010 lasted less than 2.5 months and 50% lasted less than 9 months. In 2004, the decisions that were based on the demand of the plaintiff accounted for 51.2% of all employment litigations and among them 37.7% ruled in favour of the employee. There are no statistics on the costs incurred by the employers. Reinstatement due to unfair dismissal is quite limited in practice and limited by law to a few specific cases such as violation of the basic rights (union membership, discrimination, etc.)^e. In 2004, it was estimated by the ministry of justice that only 2.5% of employees fired for economic reasons went to trial to challenge the decision while 25.8% of employees fired for personal reasons went to trial^f.

In Denmark Collective Agreements regulate the mediations for non-discriminatory wrongful dismissal complaints. For the other employment litigations linked to unfair dismissals, a specific dismissal tribunal with lay or professional judges is needed. The employer faces the burden of proof and no court charges are involved. The length of the trial is 9 months for blue-collar workers and 12 months for white-collar workers. If the dismissal is judged unfair, reinstatement orders are possible but rare. Compensation is more common. It is however limited to 52 weeks of pay for blue-collar workers and in the case of long service (the average is 10.5 weeks pay). For white collar workers compensation increases with age and tenure: 9 months if more than 20 years tenure and maximum 6 months if more than 30 years of age and 15 years of tenure^g.

^a<http://www.eeoc.gov/eeoc/statistics/enforcement/charges.cfm>

^bGerald L Maatman, «Annual Workplace Class Action Litigation Report,» 2011

^c<http://questions.assemblee-nationale.fr/q13/13-97924QE.htm>

^dBrigitte Munoz Perez et Evelyne Serverin, «le droit du travail en perspective contentieuse,» 2005

^e«La nullité du licenciement est prononcée en cas de violation d'une disposition protectrice du Code du travail (licenciement d'une femme enceinte, d'un accidenté du travail, d'un représentant du personnel) ou d'une liberté fondamentale (non-discrimination, droit de grève, victimes de harcèlement moral ou sexuel).

Source: La réintégration d'un salarié dont le licenciement est annulé par les juges - Editions Tissot

^fBrigitte Munoz Perez et Evelyne Serverin, «le droit du travail en perspective contentieuse,» 2005

^g

3.1.2 Under dualism, workers may receive too little training

Another form of inequality is unequal access to training. Firms train workers when they expect to benefit from productivity gains not matched by equivalent increase in wages. Training is more likely to be paid by firms when it provides skills specific to the firm, (Wasmer 2006) or in labour markets with frictions where rents are shared between employers and employees (Acemoglu and Pischke 1999). A prerequisite is that employment relationships last long enough to compensate for the costs of training.

It has been shown that workers under temporary contracts are typically not trained: employers do not expect to transform the temporary contract into a permanent one. However, workers under probationary periods in a CLPP will not benefit from more training under the current incentive system of training. Workers in a CPSR may have better access to training, but this remains to be demonstrated.

This can be treated under a reform not affecting the types of contracts: for instance, Lemoine and Wasmer (2010) proposed for France to simply change the incentive system for firms: if payroll taxes or layoffs costs were lower for firms training more workers, including workers in temporary contracts, this would effectively reduce the proportion of untrained workers. It is easy to implement such a system, although it is not without potential perverse effects, such as firms hiring workers and training them only to reduce their payroll costs. The reforms of incentives to train can be made in combination with reforms of labour contracts, or independently of such a reform.

3.1.3 Dualism leads to unequal access to housing and credit markets

Another component of dualism is that working under a temporary contract may limit access to housing and loans (Cahuc and Kramarz 2004) in some countries such as France, Italy or Spain. It is much more difficult for a worker who does not have a permanent contract to get access to housing. Banks are less willing to grant temporary workers a loan in order to buy a house and landlords favour workers with permanent contracts making it more difficult for a temporary worker to rent a house or an apartment. For instance, Cahuc and Kramarz (2004, pp. 21-23) report that in France, young workers (between 20 and 35) are 4 to 8 percentage points more likely to live on their own and not with their family when they have a permanent contract as opposed to a temporary contract. At all ages above 30, there is a 10 to 15 percentage point difference in the home ownership rate between the two types of contracts, the rate being higher for permanent workers. Therefore, the wedge between these two types of workers may be exacerbated due to the legal distinction between contracts.

In this case, contracts with large probation periods may not help much, as banks and landlords will still discriminate against workers under probation. A worker with low seniority rights under a CPSR may be discriminated less by banks and landlords. Alternative reforms may be more

specifically addressing discrimination in rental and credit markets. In particular, the rental housing market is known to be heavily regulated (Djankov et alii. 2003). Partial deregulation has been argued to generate strong potential gains.

3.2 Dualism generates high employment volatility

In economic booms, the existence of two separate forms of employment (temporary and permanent) generates strong job creations, even if they are mainly concentrated in low productivity firms. The wage evidence used in Blanchard and Landier (2002) suggests that lower costs on fixed-term contracts induces firms to design routine, low productivity jobs, which they can fill through the use of fixed-term contracts. In recessions, this duality exacerbates job destruction (Andres et alii. 2009). This is due to the fact that the existing regulations force firms to respond to economic fluctuations through labour turnover instead of using alternative methods such as making changes in the workplace organisation. Indeed, a huge gap between the low (and sometimes nonexistent) severance pay for fixed term contracts and the high protection level of the current permanent contracts induces excessive turnover. Bentolila et alii. (2010) give some evidence of this phenomenon as they find that the larger gap between the dismissal costs of workers with permanent and temporary contracts in Spain as compared to France is responsible for the much higher unemployment rate in Spain. Introducing parameters corresponding to the French EPL to the Spanish model of employment, they find that the unemployment rate following the crisis would have been 45% less important than the observed one.

The current dissociation between fixed term contracts and permanent contracts was meant to grant firms more flexibility, as they would be able to adapt their labour force more rapidly to the economic situation. However, as put in Blanchard and Landier (2002), the excess turnover induced by the *“forced coexistence of fixed term and regular contracts can be high enough to offset the efficiency gains of improved flexibility”*.

However, the argument presented in the previous sub-section carries through. There is considerable heterogeneity in the labour market turnover rate even with a single labour contract. Hall (1982) showed that US workers had a very high turnover rate at the start of their careers and then settled into jobs that lasted for a very long time. The fragmentation of the US labour market therefore bears many similarities with the more visible segmentation of the European labour markets. In both cases, the same groups (the young, the lower-qualified and the seniors) experience greater job insecurity: characterised by lower wages and higher turnovers.

One of the arguments in favour of a single labour contract is that workers under temporary contracts are not offered permanent contracts at the end of their current job. This may however simply be due to the fact that permanent contracts are not attractive enough from the employers' side, pointing out to the reform of permanent contracts. The elimination of temporary contracts may simply discourage employers from taking risks with new workers, in the absence of an

additional reform of permanent contracts. The key issue, addressed in the theory section, is to compare two labour markets: one in which fixed and permanent contracts coexist and where fixed term contracts are sometimes transformed into permanent contracts at the end of the fixed term contract; and an alternative labour market in which temporary contracts are eliminated and replaced with contracts with progressive rights, and verify the extent to which low seniority workers in such contracts are laid-off or not. In the theory section we will attempt to compare the two situations.

3.3 Dualism and workers' screening under asymmetric information

The previous discussion points out to the role of screening and unobserved heterogeneity between workers. In particular, temporary contracts often serve as a screening tool with some negative consequences.

Implementing the single labour contract advocated by the 'pure' employment contract school of thought (replacing all non-standard contracts and the permanent contract by a single labour contract) whether it be using the idea of the decreased dismissal requirements sub-school or the 'prolonged trial period' sub-school may result in a similar situation to the one that exists in a dual labour market. The relatively long probationary period of a single labour contract could be used by employers as a form of temporary employment. During this period, the dismissal requirements are reduced, and the employer facing some risk of being hit by a bad shock in the next period may decide to dismiss all the workers before they reach the end of the period. Likewise, incorporating new legal motives to the old permanent contract that would *de facto* correspond to the legal motives for using a fixed term contract may not induce much change to the current situation in which both temporary and permanent contracts exist. Employers would have one tool instead of two but the duality of the labour market would most likely remain. The single labour contract is indeed not meant to eliminate inequality.

3.3.1 Temporary contracts may generate abuses

In France for example some employers engage in fixed term contracts without valid motives when the length of the trial period of permanent jobs is too short (2 months for employees, 3 months for technicians, 4 months for an executive), or because the branch agreements do not allow the renewal of the contract. Some employers, especially in the restaurant industry, use what is known as "extra-contracts": contracts that are not written and give no motives to justify their limited duration (Gleize, 2011).

The overuse of temporary contracts is therefore a screening strategy, due to the perceived difficulty of employers to dismiss their workers after a few months under a regular contract. It may be due to regular contracts having too high protection, although most regular contracts already have low protection for workers of low seniority levels. Another possibility is that the

social norm does not allow workers hired under a regular contract to be fired except for cause, and that “insufficient skills or effort” is not considered as a valid cause.

This is an important discussion, unfortunately lacking evidence: de facto in many countries, permanent contract are not associated with strong EPL at low seniority: yet employers are reluctant to hire workers, especially young workers with no employment experience. Addressing this issue is beyond the scope of this paper but this certainly deserves some more work. The question is therefore whether a contract with progressive rights would fully ease the hiring process, that is, eliminate such a norm. However, its proponents rarely insist on the fact that the new contract would facilitate the screening of workers and mitigate the norm against laying-off permanent workers under low seniority with insufficient skills or making low effort. For the norm to evolve, this aspect of the debate must become more central in the discussions. A contract with an extended probationary period would instead eliminate the norm. It would not eliminate the other costs of dualism pointed out above.

3.3.2 Workers may face stigma effects from being trapped between different temporary contracts

Applicants, previously employed under temporary contract, may be discriminated against: employers may presume that their previous, temporary contract, was not transformed into a permanent one as a result of poor motivation or a lack of skills.. However, the fact that many temporary contracts expire for legitimate reasons beyond workers’ characteristics mitigate this effect. This is notably the case when the renewal of the temporary contract is prevented by law or when the firm has good reasons not to offer a regular contract (insufficient demand in the medium term, excessive protection of permanent contracts). Instead, a worker under a Contract with Progressive Seniority Rights (CPSR) or with Long Probation Periods (CLPP), if laid-off under this new contract, would necessarily send a negative signal in the absence of objective reasons: the termination of such a contract would be due to workers’ effects such as lack of skill or motivation with certainty, not to firms’ effects or the formal impossibility to go on with the contract.

3.3.3 Complexity and discontinuity arguments

An argument sometimes heard is that a single labour contract will reduce the complexity in the menu of contracts for employers. This is true only if it really replaces temporary contracts instead of creating a new one. A similar argument applies in the housing and credit market: if economic agents (such as tenants, landlords, banks, applicants for a mortgage) rightly perceive the risks of layoffs for a worker with a given seniority in a CPSR contract, the single contract will indeed reduce the complexity of the perception of the labour market status of the applicants. This may not be the case, though. As argued above, even workers themselves may misperceive

their expected time horizon in the firm.

Finally, CPSR contract are thought by its proponents as a way to reduce discontinuities in employment protection. If the new contract carefully avoids probation periods, this will indeed be the case, yet at the cost of having workers with low seniority and low protection being sometimes laid-off and thus with possible misperception and stigma effects as discussed previously.

3.4 Other costs employment protection that a single labour contract would not eliminate

In the absence of a major revision of the legal environment and the legal practices relative to individual and collective layoffs, several features associated with employment protection would most likely remain after the implementation of a single labour contract. We list here the most important positive and negative features that would remain.

1. A recurrent complaint of employers and of employees is the uncertainty and length of layoff procedures imposed by employment protection especially in the case of litigation. In France, most litigation cases concern individual layoffs (70%, see the box) and last more than a year. See the box for a discussion of three countries the United States, France and Denmark. See Box 6²⁹.
2. Employment protection generally has distortive effects on capital accumulation and misallocation of productive units leading to lower productivity. Hopenhayn and Rogerson (1993) and Bertola (1994) find that productivity is lower because of a misallocation of employment in technologies, favouring less productive structures, leading to reduced incentives for capital accumulation. Bassanini et alii. (2009) empirically document the link between employment protection and productivity growth and find that EPL reduce productivity growth in industries where EPL are more likely to be binding. Cingano et al. (2010) find a negative effect on capital per worker in the case of European firms. On the other hand, Autor et al. (2007) find that the effect may be positive in the United States: the authors use the adoption of wrongful-discharge protections by U.S. state courts from the late 70s to the late 90s to evaluate the link between dismissal costs and other economic variables.
3. Fear of layoff: Postel-Vinay and Saint-Martin (2005), Clark and Postel-Vinay (2009), and Deloffre et Rioux (2004) showed that employees perceived their job to be less secure in countries with stronger employment protection using the European Community Panel survey data.
4. Stress and EPL: Lepage-Saucier and Wasmer (2012) find that a higher degree of EPL generally leads to a higher degree of stress across OECD countries as well as within provinces.

²⁹This does not necessarily means that the total number of workers in a litigation procedure regarding to collective layoffs is small since by definition collective layoffs cover a large number of workers.

The theoretical mechanisms are numerous.

- (a) Restrictions to layoff imply higher quasi-rent associated with holding a job: the risk of a layoff is lower but the associated loss is higher
- (b) Lower labour turnover leads to a *“mismatch effect”* leading to potential job dissatisfaction.
- (c) Layoff is a disciplinary device for workers (Shapiro and Stiglitz 1984). If layoffs are too costly, firms may need to increase workers’ monitoring or psychological pressure to ensure an adequate level of effort from them (*“psychological pressure effect”*).
- (d) In economically non-viable jobs, with costly economic layoffs: firms may want to layoff for cause and thereby obtain dismissals at a lower cost (*“harassment effect”*) or may induce quits (*“bullying effect”*).
- (e) Effects on hours: adjustments occur more at the intensive margin (hours per worker) rather than at the extensive margin (employment), see Lepage-Saucier (2010) for this overtime and *“workload effect”*.

3.5 Partial conclusion: the costs of a single contract reform, the benefits of simpler, partial reforms

A first conclusion is that a single contract reform leading to elimination of temporary contract (the idea of the ‘extended’ single employment school of thought, replacing fixed duration contracts and permanent contract by a single labour contract) may lead to alternative forms of dualism, such as the risk of a surge in agency contracts or training/apprenticeship contracts in order to cope with their context of volatile and low demand. Therefore the risk is of shifting from one specific type of dual market, in which workers are separated between those employed under fixed term contracts and those employed under permanent contracts, to a dual market of workers under agency contracts and workers under single labour contracts. The name of the contracts would change but the situation is likely to be very similar.

A second conclusion is the difficulties of the political economy of the single labour contract. The discussion of this Section clearly points to one important dimension of the single contract: it does not necessarily aim at reducing the costs associated with dualism, but rather at starting a discussion between representatives of employers and employees at the country level to reduce the degree of protection of permanent contract. This is why the phrasing ‘single labour contract’ may fundamentally reflect both a *quid pro quo* (an exchange of something against something else understood by the parties) and a *quiproquo* (a real misunderstanding): perceived as the dismantlement of temporary contracts with no other change in flexibility by some, and instead as a way to reform the permanent contract with increased flexibility by others. The political economy of moving to a single contract may therefore be rapidly blocked, as a political consensus for status quo would be highly likely: unions may not accept lower EPL in exchange for a reduction in the number of temporary contracts, while employers may not want to suppress

temporary contracts if the usual costs of employment protection, notably legal uncertainty, do not disappear with the new contract. We will however see in Section 4 that a more subtle interpretation of the political economy of single contracts may be given.

One may argue that advertising labour market reforms with the proposal of a “single labour contract” is a smart way of insisting on the need of convergence between different types of labour contracts. The removal of temporary contracts may indeed appear *a prima facie* as a costless solution for permanent employees. However, the costs of dualism are far less documented and are probably much less important than the costs of employment protection as such. The proponents of a ‘single labour contract’ want an important reform of permanent contracts, with more flexibility. For that, the single contract offers in exchange the disappearance of temporary contracts, and often require in exchange an extended probation period. Since fixed duration contracts are fairly well protected as emphasised in Cahuc et alii. (2012), it is hard to believe that unions would favour this solution.

A third conclusion is that partial reforms may efficiently address some of the costs of dualism. Reforms regarding rental housing markets may improve the access to housing for workers under low seniority rights or temporary contracts. Training reforms may raise the access to training for workers under low seniority rights. Finally, since proponents of a single labour contract propose to generalise severance payments that would increase with seniority in the current job, this can be done without removing temporary contracts, by simply adapting the existing contracts to this logic. It must also be noted that conditioning social rights to seniority within the current firms reduces incentives to professional mobility, just as rent controls reduce geographical mobility. One may think instead of severance payments and other social rights that would increase with seniority in the career, not in the current firm (Lemoine and Wasmer, 2010).

4 A simple model of workers’ heterogeneity and the demand for temporary contracts

In this Section, we will take stock of the descriptive evidence of previous Section and analyse the intuitions more formally. For that, we develop a simple and stylised setup where both types of contracts may be offered to applicants and investigate the role of employment protection, heterogeneity of skills and finally aggregate productivity in the incidence of each type of contract. The model is used first to analyse the effective layoff costs as a function, not only of the legal environment. Next we consider the effect of suppressing temporary employment, and also the role of the coexistence of permanent and temporary workers.

The key trade-off between permanent and temporary contracts in the following model is inspired by the debates summarised in the previous Section. The branches of the trade-off are that i) temporary contracts act as an extended probation period allowing firms to discover the productivity of their new employees; but ii) permanent contracts offer, through protection of

the workers, additional benefits to the firms: by reducing turnover, firms do not have to replace their workers as often and save on hiring and training costs. By increasing the time horizon of their workers, they raise their investment in the firm, including specific skills (Wasmer 2006). By offering an implicit contract of stability, they may raise effort through reciprocity.

It is important to keep in mind that our model will allow several interesting extreme cases: either a world with only permanent workers (when the demand for temporary contracts vanishes), or only temporary workers (when firing costs in permanent contracts are removed). In the latter case however, this is not equivalent to a single contract, as the firm faces additional costs due as explained above to higher turnover and lower productivity.

4.1 Setup

Both worker and firm live two periods. We think of the model as an overlapping generation of firms, so that in the steady-state, total employment is simply a weighted average of employment in each period. At the beginning of the first period, a mass of workers applies to the firm. The firm has a linear technology and only hires workers when their expected value (taking into account the layoff costs associated with the contract and the turnover) exceeds the cost of hiring.

All workers start with the same productivity during an initial period (called period 1 hereafter) which has value V_0 . Subsequently, their productivity diverges. Based on the perception the firm has from the worker, the firm forms a subjective probability distribution of the future productivity of the worker after the initial period. On the basis of the distribution, the firm decides i) to reject the application, ii) offer a temporary contract iii) or offer a permanent contract.

The actual productivity will be revealed after one period, which is also the length of a temporary contract. Hence, the trade-off is the following:

- A worker in a permanent contract may quit the firm with low probability q_P but it is more costly for the firm to layoff if his productivity turns out to be low. The cost is denoted by F and is proxied by the **OECD EPL index on regular contracts**.
- A worker in a temporary contract may quit the firm before the term of the initial contract with a probability $q_T > q_P$. This means that with probability $(1 - q_T)$ the firm has to be separated from the worker, even if it would prefer to keep it. An alternative interpretation is that legal restrictions prevent from renewing the temporary contract. In this case, it can be proxied by the **OECD EPL index on temporary contracts**. Separation, in any event, is costless: it is sufficient not to renew the temporary contract.³⁰

³⁰Alternative branches of the trade-off between temporary and permanent contracts are that temporary contracts are associated with underinvestment in training (Lemoine and Wasmer 2010, lower TFP (Dolado, Ortigueira and Stucchi, 2012), lower effort or higher difficulty to layoff before the end of the duration of the contract (Cahuc et alii. 2011).

- The value of the contract must exceed the cost of hiring the worker, denoted by H . H has several components, including training. A component of H , especially for a small business, is the setup costs of firms, proxied by the **OECD index of setup costs**. In particular, $H > V_0$, since the firm would otherwise hire automatically every worker.

In our 2 period setting, once the productivity is revealed, if the worker has a sufficiently high productivity, (s)he is never laid off subsequently. We later show that our findings are also robust to allowing an infinite number of periods.

Denote by y the marginal productivity of a worker; $g_\epsilon(\tilde{y})$ the subjective density of the productivity \tilde{y} over a finite support (\underline{y}, y) where ϵ is a parameter of the distribution of worker's skills, reflecting the probability of having low productivity; w the wage (assumed to be exogenous to start with); $V_P(\epsilon)$ the expected value of a worker under a permanent contract; $V_T(\epsilon)$ the expected value of a worker under a temporary contract. We have:

$$V_P(\epsilon) = V_0 + (1 - q_P) \int_{\underline{y}}^y \text{Max}(\tilde{y} - w; -F) dG_\epsilon(\tilde{y})$$

$$V_T(\epsilon) = V_0 + (1 - q_T) \int_{\underline{y}}^y \text{Max}(\tilde{y} - w; 0) dG_\epsilon(\tilde{y})$$

We are going to show that according to the type of distribution they expect, firms either offer a temporary contract, a permanent contract or no contract at all:

$$\int_{\underline{y}}^y \text{Max}(\tilde{y} - w; -F) dG_\epsilon(\tilde{y}) = \int_{R(F)}^y (\tilde{y} - w) dG_\epsilon(\tilde{y}) - F \cdot G_\epsilon(R(F))$$

where $R(F)$ is the reservation productivity cut-off and is equal to $w - F$. Further, an integration by part leads to:

$$\begin{aligned} \int_{R(F)}^y (\tilde{y} - w) dG_\epsilon(\tilde{y}) - F \cdot G_\epsilon(R(F)) &= (y - w) - \int_{R(F)}^y G_\epsilon(\tilde{y}) d\tilde{y} - (1 - G_\epsilon(R(F))) - F \cdot G_\epsilon(R(F)) \\ &= (y - w) - \int_{R(F)}^y G_\epsilon(\tilde{y}) d\tilde{y} \end{aligned}$$

which leads straight way to

$$V_P(\epsilon) = V_0 + (1 - q_P) \left[(y - w) - \int_{w-F}^y G_\epsilon(\tilde{y}) d\tilde{y} \right]$$

$$V_T(\epsilon) = V_0 + (1 - q_T) \left[(y - w) - \int_w^y G_\epsilon(\tilde{y}) d\tilde{y} \right]$$

4.2 Reservation strategies and subjective perceptions by firms

It is clear from the equations above that layoff costs F reduce the value of a permanent contract. They also reduce the cut-off value of productivity and hence reduce the productivity of permanent workers given that they are not being fired. An increase in the upper value of the support y , at a fix G , raises the value of both hires, as does as a decrease in the wage w .

There are therefore three possible cases for a given prior distribution G :

1. $V_P(\epsilon) > \text{Max}(V_T(\epsilon), H)$ in which case the firm offers a permanent contract
2. $V_T(\epsilon) > \text{Max}(V_P(\epsilon), H)$ in which case the firm offers a temporary contract
3. $H > \text{Max}(V_P(\epsilon), V_T(\epsilon))$ in which case the firm does not offer any contract.

Interestingly, this depends mostly on the comparison between the integral of the cumulated distribution function $\int G_\epsilon$ and the parameter values: the support of the distribution \tilde{y} , the wage w , the quit rates q_P and q_T and the firing costs F .

A generic situation would be for the firm to compare the mean of the distribution and its variance, as illustrated in Figure 4. For common distributions, such as normal or uniform, we should expect a negative trade-off for both $V_P(\epsilon)$ and $V_T(\epsilon)$. However, it is not true in the case of a generic distribution, even unimodal ones. It can be shown that a change in the mean or the variance can either increase or decrease the value of $V_P(\epsilon)$ or $V_T(\epsilon)$. It can also be shown that the probabilities of quit q_P and q_T have no impact on the slopes of $V_T(\epsilon) = H$ and $V_P(\epsilon) = H$. Finally, the slope of $H = V_P(\epsilon)$ should be generally bounded between the slope of $H = V_T(\epsilon)$ and infinity. However, to go further, we need to impose functional forms on the distribution of productivities $g(y)$.

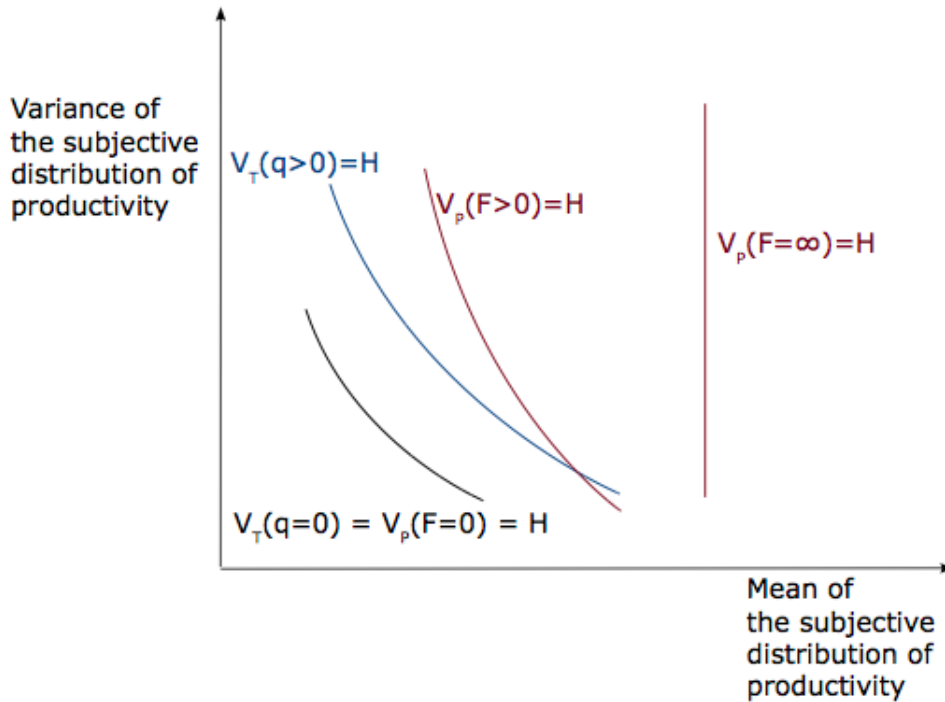


Figure 4: Indifference curves of the firm between the different contract types with $q_P \equiv 0$, but with other parameters taking various values: $q_T > 0$ or $q_T = 0, F = 0$ or $F > 0$ or $F = \infty$

4.3 Example: a uniform distribution

To further simplify, let us start from a uniform distribution, and denote by ϵ a distribution parameter such that $\underline{y} = (1 - \epsilon)y$. Hence, ϵ characterises both the higher risk and the lower expected productivity of a worker type.

$$g(\tilde{y}) = \frac{1}{\epsilon \cdot y}$$

$$G(\tilde{y}) = \min \left[1; \max \left(0; 1 - \frac{y - \tilde{y}}{\epsilon \cdot y} \right) \right] = 1 - \frac{y - \tilde{y}}{\epsilon \cdot y} \text{ for } y \text{ in } ((1 - \epsilon)y, y)$$

Further, a firm will make perceptions about the parameter ϵ : for a given worker type, e.g. a worker with experience, it anticipates a low ϵ , that is a low-risk, high-productivity worker. For another type, e.g. a young workers, it anticipates a higher ϵ , that is lower productivity and a higher risk. Therefore, our specification features quite well the main dimension of dualism, which is age or experience.

Finally, the firm receives the application in a pool of applications for which there is an ex-ante

distribution of the ϵ . To simplify, we also postulate a uniform distribution of the ϵ 's, that is a uniform of the uniform distributions. Since we need negative values for productivity, ϵ has to be larger than $y = 1$ and hence we assumed $\epsilon \sim U(0, 2]$.

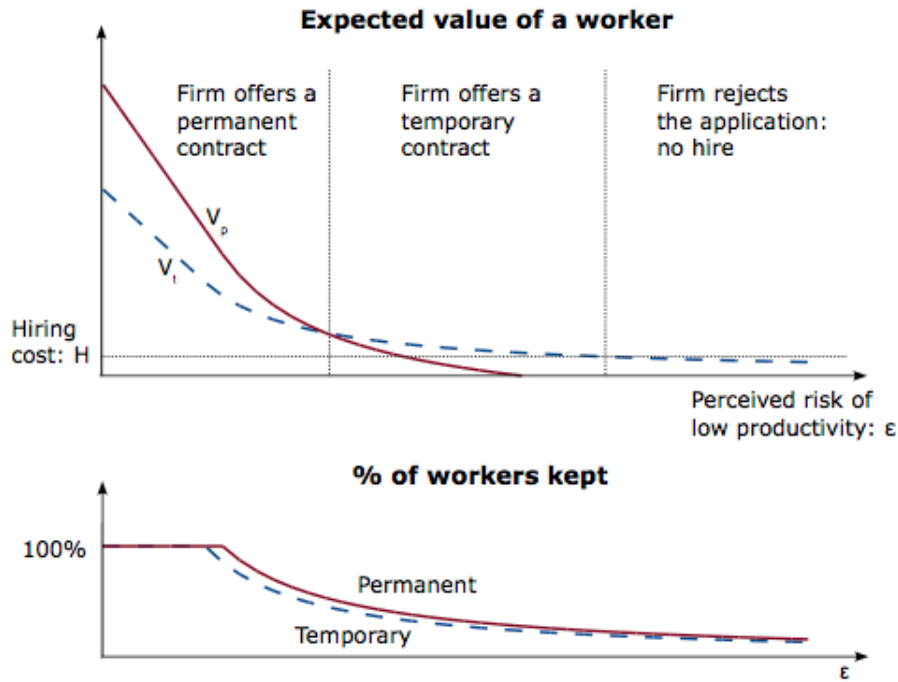
4.3.1 The effect of worker's heterogeneity on the demand for temporary contracts

Let us start in fixing a value for ϵ . The actual values of $V_P(\epsilon)$ and $V_T(\epsilon)$ are:

$$V_P(\epsilon) = V_0 + (1 - q_P) \min \left[y - w - \frac{\epsilon y}{2}; \max \left(0; \frac{(y - w + F)^2}{2\epsilon y} - F \right) \right]$$

$$V_T(\epsilon) = V_0 + (1 - q_T) \min \left[y - w - \frac{\epsilon y}{2}; \max \left(0; \frac{(y - w)^2}{2\epsilon y} \right) \right]$$

According to the cut-off values for the firm's decisions to keep workers, it is also easy to compute the expected ratio of workers kept in the firm after the productivity has been revealed, for each distribution parameter ϵ . Recall that ϵ is a parameter that characterises the spread between the maximum value and the minimum value. Both are shown in figure 5, where we use the values $y = 1$, $w = 0.5$, $q_P = 0$, $q_T = 0.2$, $F = 0.05$, $\epsilon \in (0, 2]$. We can clearly see that for workers with the lowest values of ϵ (highest expected productivity and lowest risk), the likelihood that they will have to be fired at the end of the first period is low and the firm will attribute a permanent contract. For a higher ϵ , the firm will opt for temporary contracts that can be allowed to expire without firing costs in the case of low productivity. Finally, for very high ϵ , the expected value of either contract is not worth the hiring cost H .



$$y = 1, w = 0.5, q_P = 0, q_T = 0.2, F = 0.05$$

Figure 5: Expected value of worker and expected % of workers kept according to ϵ and the type of contract

4.3.2 The positive effect of EPL on the demand for temporary contracts (new hires and stocks)

The next step is to investigate, over the distribution of the pool of applicants, that is, on average over the different possible $\epsilon \sim U(0, 2]$, how many contracts of each type are initially offered, and, at the end of the first period, how many of them are laid-off or preserved and how many quit.

We proceed as follows. We first vary the two main institutional features of the model, namely layoff costs on regular contracts F and restrictions to the use of temporary contracts q_T . Figure 6 shows, for various layoff costs F and depending on the value of the risk associated with each workers ϵ from low (top) to high (bottom):

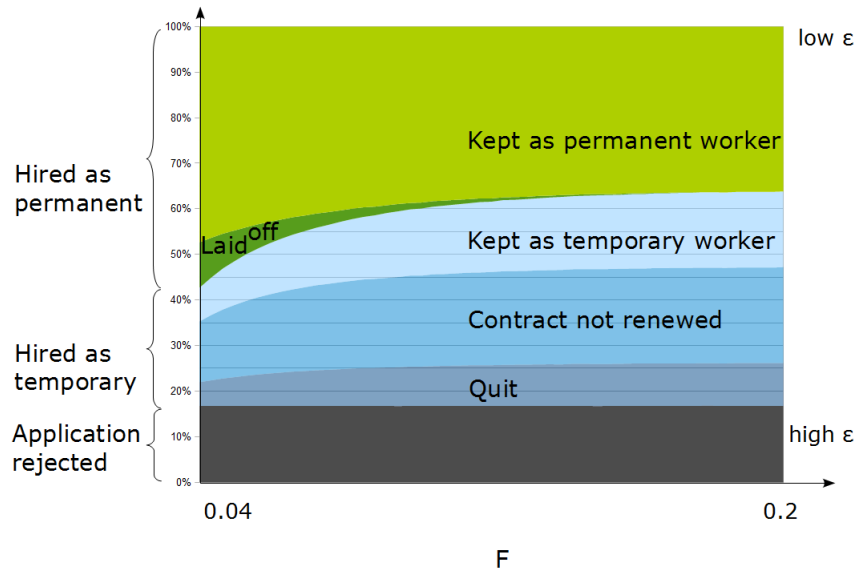
1. the fraction of workers who receive a permanent contract and are kept after the revelation of idiosyncratic productivity (light green)
2. the fraction of workers who receive a permanent contract and are subsequently laid-off (darker green)

3. the fraction of workers who receive a temporary contract and are kept/transformed after the revelation of idiosyncratic productivity (light blue)
4. the fraction of workers who receive a temporary contract and are subsequently not renewed (darker blue)
5. the (fix) fraction of workers who receive a temporary contract and quit or are not transformed due to legal reasons (purple)³¹
6. the rejected applications because they are too risky (dark grey).

As layoffs costs of regular contracts increase, the fraction of layoffs under permanent contracts decreases, and even reaches zero as F approaches 0.15, since it is no longer profitable to pay the layoff cost even for the lowest productivity workers. However, a higher F also leads to a substitution from permanent to temporary workers: the fraction of temporary workers increases, as well as the total number of non-renewed temporary contracts. Finally, given that the temporary contracts serve as a buffer, the number of rejected applications is invariant in F . Total employment is invariant here.³²

³¹Formally, the quitters are taken randomly from the distribution of temporary contracts and are therefore not particularly associated with higher ϵ as the figure would wrongly suggest, but they are placed here is for convenience of the representation. The same is true for layoffs in each type of contract: they are only more likely to occur when ϵ is higher.

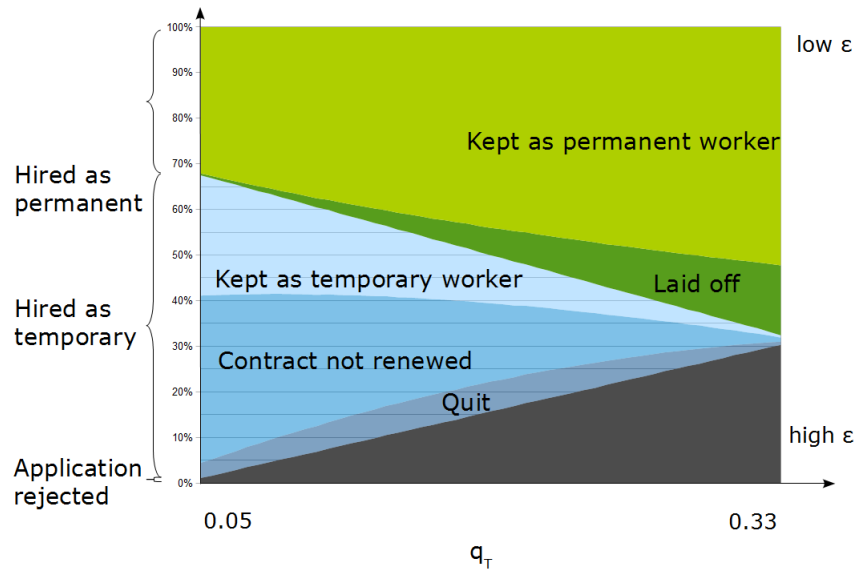
³²In a more sophisticated version of the model with search frictions, however, this would no longer be true: the higher inflows into unemployment due to a higher fraction of temporary workers would contribute to unemployment. We do not pursue this here, as our focus is on the hiring decisions of firms and the relative demand of temporary contracts.



$$y = 1, w = 0.5, H = 0.06, q_P = 0, q_T = 0.2, F \in [0.03, 0.2], \epsilon \in (0, 2]$$

Figure 6: Impact of layoff costs F on contracts ratios

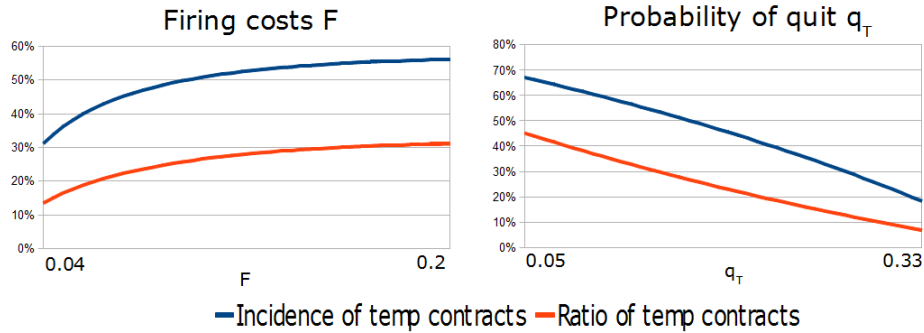
Figure 7 represents the role of the restrictions on the renewal of temporary contracts, featured by q_T , also interpretable as the quit rate of temporary workers. Intuitively, a higher q_T discourages firms from hiring temporary workers: the surface of the blue area (number of temporary contracts) decreases as q_T goes up. In turn, the number of rejections also goes up. As q_T increases, the firm prefers to hire ever riskier workers in temporary contracts, but also end up dismissing a greater share of them.



$$y = 1, w = 0.5, q_P = 0, H = 0.06, F = 0.05, q_T \in [0.05, 0.33], \epsilon \in (0, 2]$$

Figure 7: Impact of parameter q_T (quit rate or non-transformation rate of temp. contracts) on contracts ratios

The two previous charts provide the proportions of offers and rejections reported to the total number of applications. It is also interesting to compute two derived statistics: first, the fraction of temporary contracts among all hires, that is, the incidence of temporary contracts. Second, the fraction of temporary contracts in the stock of employees. These two statistics obviously differ given that temporary contracts end more frequently and the reservation threshold of productivity is also higher for temporary contracts. From the model, we calculate this share in the steady-state as the fraction of surviving temporary contracts reported to the number of surviving permanent contracts. Figure 8 indicates that the fraction of temporary contracts increases with the firing costs F both in the stock and in the inflows to employment and that higher restrictions on temporary contracts or higher quits of temporary workers (that is, higher q_T) reduce this rate.

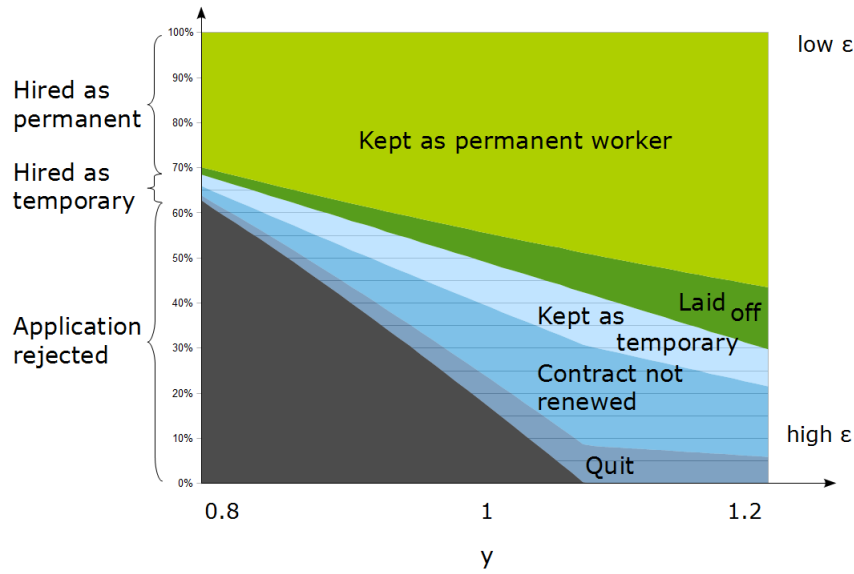


$$y = 1, w = 0.5, q_P = 0, H = 0.06, F \in [0.03, 0.2] \text{ (and } q_T = 0.2), q_T \in [0.05, 0.33] \text{ (and } F = 0.05), \epsilon \in (0, 2]$$

Figure 8: Stocks of temporary contracts (blue curve) and inflows/incidence (red curve) of temporary contracts as a function of layoff costs F and restrictions q_T to temporary contracts

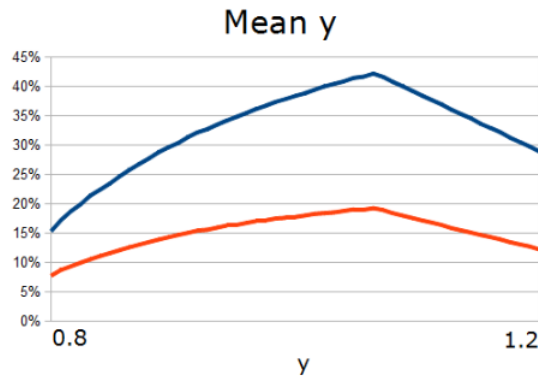
4.3.3 The ambiguous effect the business cycle on the demand for temporary contracts

Next, we investigate the effects of the aggregate productivity, featured by a different distribution of productivities. When we vary the upper limit of productivity y , the whole support of productivities $((1 - \epsilon)y, y)$ shifts up, while keeping constant the value of the relative dispersion of productivities ϵ . Figure 9 shows the impact of aggregate productivity y on contract types. Both types of employment increase with productivity, as they both become more profitable. Interestingly, the fraction of temporary workers seems to increase first, and then decrease, as productivity becomes so high that no applicants are rejected by the firm and the risk associated with hiring a worker ends up decreasing. This can be seen on Figure 10: as long as y is below 1, a higher value of productivity leads to an increase in the share of temporary contracts: firms adjust employment cautiously and the incidence of temporary contracts increases faster than the incidence of permanent contracts. The reverse occurs as productivity is sufficiently high and the incidence of temporary contracts decreases as they are substituted with permanent contracts. The latter situation can easily be interpreted as circumstances when labour market tightness is high and firms have a hard time filling vacancies, even when offering permanent positions to low-qualified applicants.



$$y \in [0.8, 1.2], w = 0.5, H = 0.06, q = 0.2, F = 0.05, \epsilon \in (0, 2]$$

Figure 9: Impact of aggregate productivity y on contracts ratios

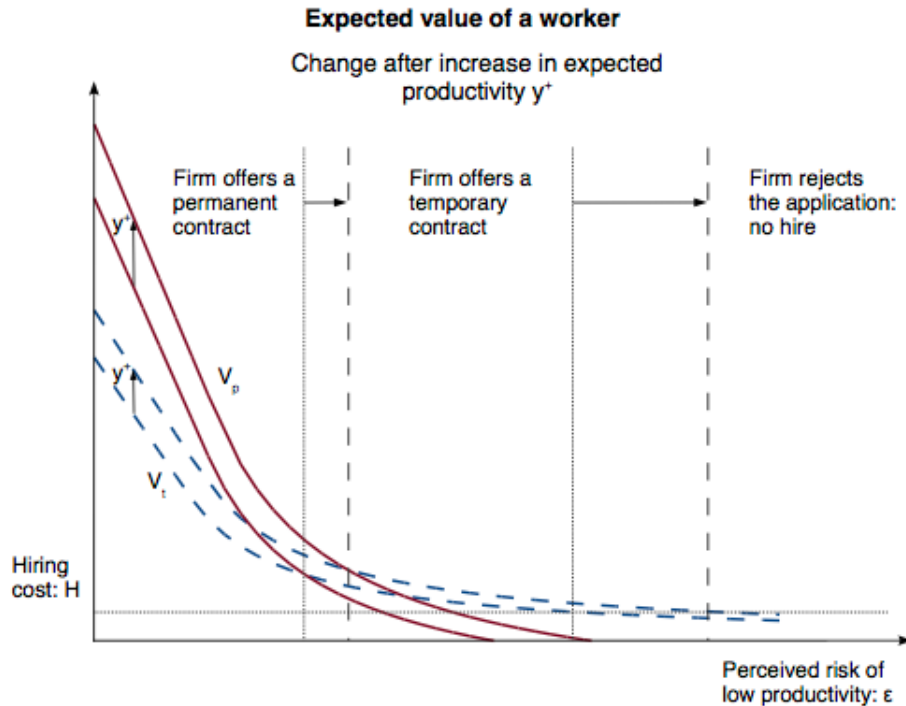


$$y = 1, w = 0.5, H = 0.06, q_P = 0, F = 0.05, y \in [0.8, 1.2], \epsilon \in (0, 2]$$

Figure 10: Stocks of temporary contracts (blue curve) and inflows/incidence (red curve) of temporary contracts as a function of aggregate productivity y

The explanation of this reversal can be better understood from Figure 11. It first shows how an increase in the general level of productivity y makes permanent contracts and temporary contracts more attractive for lower values of ϵ . Second, for the whole range of perceived risks ϵ , a higher value of y leads to higher values of both permanent and temporary contracts (resp. V_P and V_T). These two curves however have different slopes and react differently to changes in y . For some range of y , the value of V_T increases faster than V_P and for some range of y , the opposite

holds. Therefore, the intersection between the two curves may shift left or right depending on these relative shifts, leading either to lower or higher relative demand for temporary contracts.

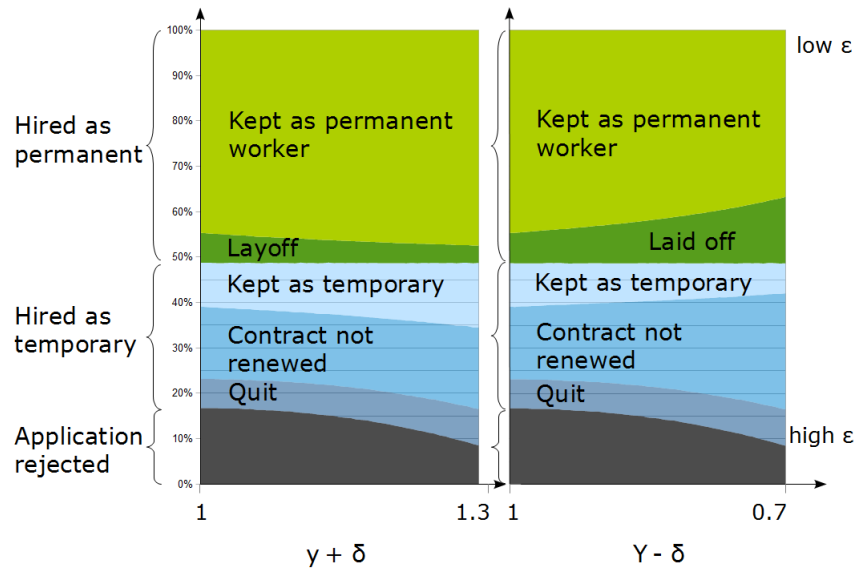


$$y \in \{1, 1.2\}, w = 0.5, q_P = 0, q_T = 0.2, F = 0.05$$

Figure 11: Impact of y on the firm's choice of contract

The next exercise is to discuss the effect of the business cycle volatility. For that, we slightly modify the initial set-up. We imagine that beyond idiosyncratic productivity uncertainty featured by the random variable \tilde{y} in the uniform distribution $((1 - \epsilon)y, y)$, there is an additional layer of aggregate uncertainty: for instance, the firm now has a probability $1 - p_m$ of 50% chance of facing a high distribution of productivities featured by $y + \delta$ and a probability p_m of 50% of facing $y - \delta$. In other words, the distribution in which the productivities are drawn is now either $((1 - \epsilon)(y + \delta), y + \delta)$ or $((1 - \epsilon)(y - \delta), y - \delta)$. In each case, the layoff decisions would differ but permanent workers are more costly to layoff and therefore more risky in bad times; on the contrary, temporary contracts are more risky in good times, as they may quit too frequently relative to permanent contracts. The firm anticipates this ex-ante and adjusts labour demand, as reported in Figure 12 which varies δ in fixing y . Hiring decisions are the same in the left panel (where δ adds up to y in good times) and in the right panel (where δ is subtracted from y in bad times). However the ex-post structure of employment differs as layoff decisions occur after the state of the business cycle is revealed. Overall, the figure shows that higher uncertainty has

almost no impact on the demand for permanent workers, but it allows the firm to take more risk in hiring more temporary contracts. Those workers' application would otherwise have been turned down. In downturns, the firm simply lets expire more temporary contracts. Although not shown explicitly, we can compute that on average, uncertainty will slightly decrease the number of permanent contracts, slightly increase the number of temporary contracts, and slightly decrease the total number of workers.



$$y = 1, \delta \in [0, 0.3], w = 0.5, q_P = 0, H = 0.06, q_T = 0.2, F = 0.05, \epsilon \in (0, 2]$$

Figure 12: Impact of the volatility of the business cycle (variance of y) on contracts ratios

This Figure represents the fraction of hires and ex-post employment of temporary workers.

5 Assessing the costs and benefits of removing temporary contracts

In this section, we analyse the role of the elimination of temporary contracts. In the first subsection, we simply simulate and compare two labour markets modelled in the previous section, one in which the two types coexist, one in which only permanent contract coexist. The comparison is clearly in favour of the dual labour market model. In the second subsection, we give a chance to the elimination of temporary contracts, in giving it a role to affect social norms related to layoffs and show that this leads to an interesting insight: it may raise the efficiency of firms to the extent that they can improve their screening of workers.

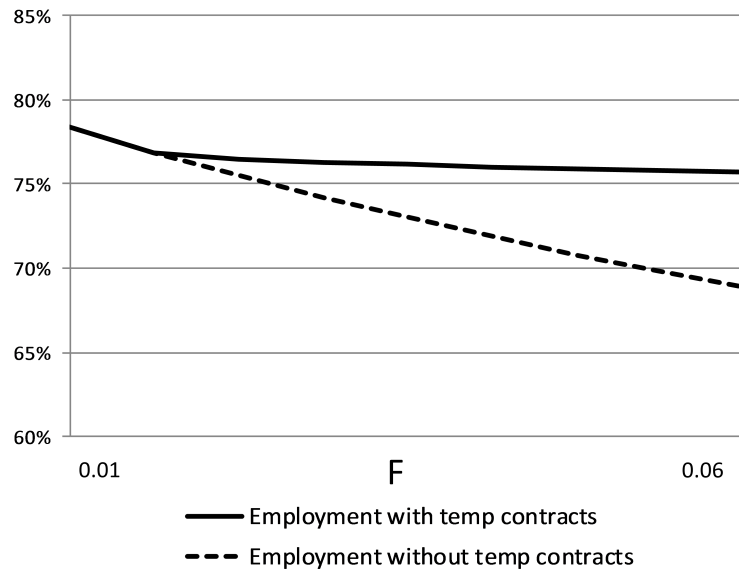
5.1 Removing temporary contracts reduces employment

Figure 13 represents the role of employment protection in the two different worlds. Starting (from the right) from a large level of employment protection (say, $F=0.06$), the employment rate (averaging up the first and second employment period, which is interpreting the model as reflecting an overlapping generation of two-periods firms) is approximately 76%. The model delivers the following predictions:

1. Removing temporary contracts leads to a 7 percentage point drop in employment at a constant level of employment protection for regular contracts.
2. Reducing employment protection raises employment in both worlds; it is faster in the absence of temporary contracts.
3. When the cost of layoffs in permanent contracts F reaches a value of a third of its initial value, the level of employment is equal to the initial value (76%).
4. At this level of F , keeping temporary contracts marginally raises employment.

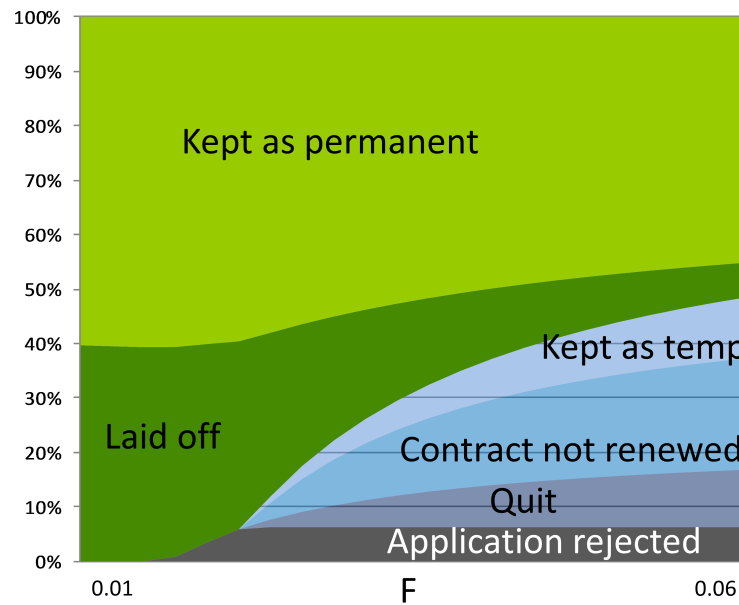
This simulation illustrates three ideas that have been present in the literature but rarely or insufficiently acknowledged in the discussions on reforms: first, employment protection has a moderate, negative impact on employment; the impact is actually greater when there is no flexibility allowed by temporary contracts; a elimination of temporary contracts requires a very large reform concerning employment protection of permanent contracts.

Figures 14 and 15 illustrate how these conclusions are reached. Starting from the high value of employment protection, a decrease in F leads to a decrease in temporary contracts, but also, at the same time, at the other side of the coin: more workers under permanent contracts are laid-off, but also, more and more permanent contracts are offered to start with. Above a threshold around $F = 0.02$, temporary contracts are no longer needed and only permanent contracts exist. Finally, the net employment effects are positive. The number of rejected applications also decrease when F decreases. For a low enough F , all applications are accepted as the risk of hiring becomes smaller than the gains. In the absence of temporary contracts (Figure 15), the same logic applies and employment increases up as firms take more hiring risks (from the right to the left again) to the point where all applications lead to employment.



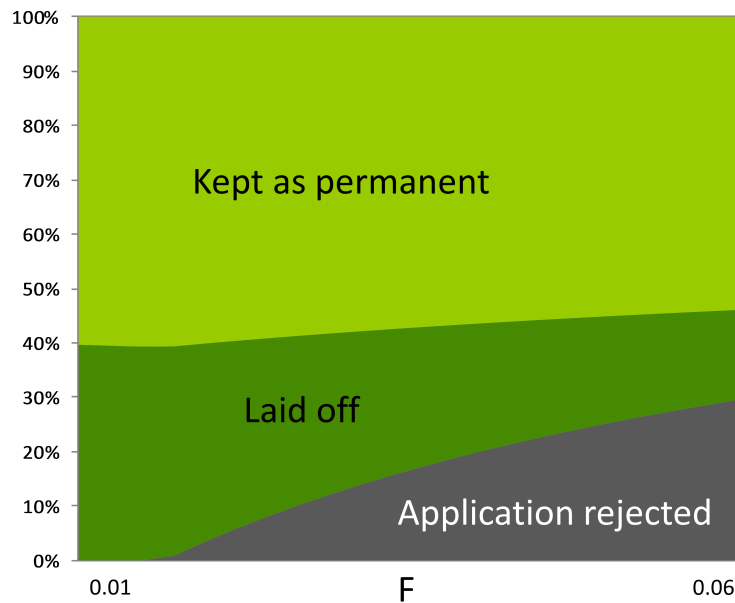
$$y = 1, \delta \in [0, 0.3], w = 0.5, q_P = 0, H = 0.06, q_T = 0.2, F = 0.05, \epsilon \in (0, 2]$$

Figure 13: The employment effects of firing costs F under a dual labor market and under a single employment world



$$y = 1, \delta \in [0, 0.3], w = 0.5, q_P = 0, H = 0.06, q_T = 0.2, F = 0.05, \epsilon \in (0, 2]$$

Figure 14: The reform of firing costs F under a dual labor market



$y = 1, \delta \in [0, 0.3], w = 0.5, q_P = 0, H = 0.06, q_T = 0.2, F = 0.05, \epsilon \in (0, 2]$

Figure 15: The reform of firing costs F under a single contract

5.2 The role of social norms with and without temporary contracts

A forgotten argument in favour of the single contract is that layoff costs may actually increase with dualism. Indeed, the structure of layoff costs is complex. Abowd and Kramarz (2003) and more recently Kramarz and Michaud (2010) argue that this structure is non-linear in the total number of layoffs. As put by the latter authors, “*Our estimates show that collective terminations are much more expensive than individual terminations: legislation, namely the requirement to set up a “social plan” in case of collective terminations, magnifies firing costs. Collective terminations entail very large fixed costs. Termination costs are essentially linear in the number of terminated workers, with collective terminations being much more expensive.*”

This would suggest that the total cost of layoffs for economic reasons is piece-wise linear, with an increase in the slope above the threshold of collective layoffs (10 employees in France). In this Section, we further argue that this cost can be larger when firms simultaneously layoff permanent workers and keep temporary workers. Indeed, firms laying off permanent workers while keeping a fraction of temporary workers may break down the implicit contract with permanent workers, which may reduce their level of effort; employment protection may even prevent this: priority may be given to reducing the number of temporary workers (a *last in, first out* clause).

This phenomenon is interesting to develop further. Ignoring it may lead to underestimate the employment protection costs for firms and more generally the costs of dualism; the coexistence of temporary employment and permanent employment in firms may lead to additional inefficiencies:

firms might lay off “good” temporary workers and not be able to lay off workers in permanent contracts that have a low productivity .

As a matter of fact, this mechanism allows us to understand the origin of a recent proposal put forward by the French National Association of Human Resources Managers (ANDRH). The proposal is simply to remove temporary contracts, *without changing the costs of layoffs under permanent contracts*. The exact wording of the proposal can be found in Appendix D. *A prima facie*, this may seem to be a surprising proposition for an employers’ association. Eliminating one margin of decision (offering a temporary contract) without affecting the formal layoff cost F is similar to reducing the amount of choice given to the firm, without any compensation. The President of the ANDRH, questioned on this apparent paradox in an audition at the French Economic, Social and Environmental Council (Conseil Economique, Social et Environnemental, section: Travail et Emploi), on April 12, 2012, gave the following answers: firms want to keep their “good workers” regardless of the contract under which they were hired, but have difficulties to lay off the workers under permanent contracts when they keep workers under temporary contracts. This may either be due to a norm, the cost of breaking the implicit contract that permanent workers should have a priority over workers under temporary contracts, or simply the interpretation of the law by the labour administration (“*inspecteurs du travail*”).

A simple transposition of this is to argue that the total cost of layoffs of permanent workers is shifted up by the increasing number of temporary workers retained by the firm. In the context of our model, the transposition of this is easy. In Section 3, we showed that the firm hires on average a number N_P of permanent and N_T of temporary workers. Further, upon revelation of uncertainty, the firm wishes to keep a fraction $\frac{N_P^k}{N_P}$ of permanent workers and a fraction $\frac{N_T^k}{N_T}$ of temporary workers, and layoff a fraction $\frac{N_P^f}{N_P}$ of their permanent workers and (not renew) a fraction $\frac{N_T^f}{N_T}$ of its temporary workers. In the logic of the argument presented above, it may perfectly be the case that the cost of laying off permanent workers is not constant, but actually a function of the permanent workers fired N_P^f and of the temporary workers kept in the firm N_T^k , denoted by $\Phi(N_T, N_P^f)$.

We are going to illustrate the logic of such a situation in a simplified setting. We assume that the cost of laying off a single permanent worker is $F = 0.03$ if the firm does not hire temporary workers; and that it increases to $F = 0.05$ if the firm does hire and retain a few temporary workers.

This change in the structure of layoff costs as a function of the hiring policy, and in particular, of the hiring policy of temporary workers, is recognised ex-ante by the rational firm. To illustrate the dilemma of the firm, we show in the next Figure the ex-ante expected profits of the firm as a function of its hiring policy (blue line). As can be seen, in our calibration, with a slight decrease of firing cost from 0.05 to 0.03, the profits of the firm are just as high (in this specific example) with no temporary workers as with a share of temporary workers at the interior solution (0.45

of temporary job offers). The left maximum is instead a corner solution. This suggests that a rationalisation of the proposal of the ANDRH is possible: firms may be indifferent, depending on parameters, between having no temporary contracts and having a large share of temporary contracts. It may even be better off, depending again on parameters, if all temporary contracts were eliminated.

The red line reflects the ex-ante well-being of workers (the average expected value of the wage conditional on remaining in the firm, across contracts types and individual productivity): this curve as a maximum for a low incidence of temporary contracts, and then it declines uniformly as the share increases. This suggests that the proposal of the ANRDH could also be beneficial to employees for this range of parameters. At this stage, we cannot conclude about this specific last point. It is simply likely that such a reform would be easier to implement in larger firms.

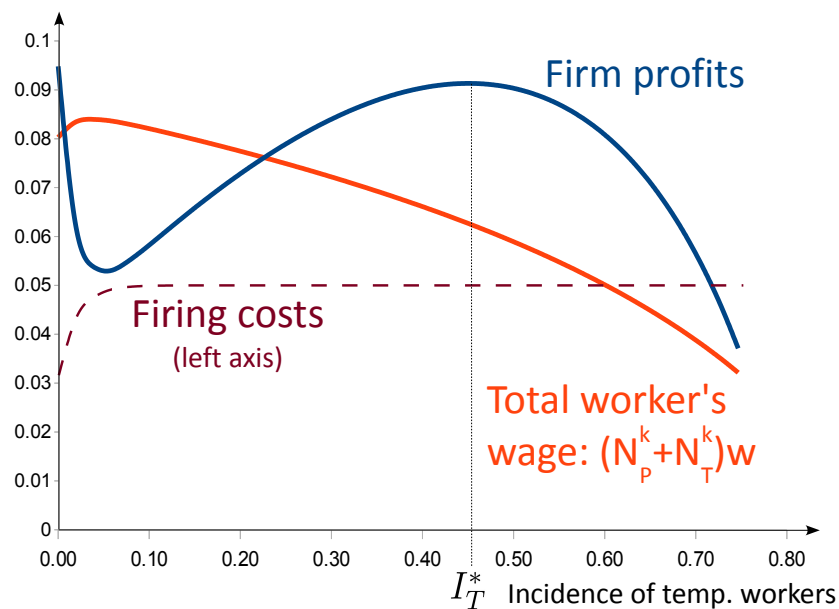


Figure 16: Optimal choice of temporary workers hired and firing costs as a function of temporary workers hired.

6 Some long term aspects: productivity growth and the demand for temporary contracts

The model developed so far also has an interpretation in terms of the economic cycle. Indeed, y and its fluctuations have an impact on the demand for temporary contracts, with in particular an inverted U-shape between mean productivity and the incidence of temporary contracts. A higher value of productivity would first raise the relative demand for temporary contracts, and

then raise the relative demand for permanent contracts as the risk of hiring diminishes with growth. We now extend the analysis.

6.1 Long-term productivity growth

We will show here that the second effect dominates in a related setup with long-term productivity growth. The analysis is based on Wasmer (1999). This is a continuous time model of balanced growth. Labour productivity evolves at a growth rate g . There is an infinite number of atomistic firms. Aggregate production Y is a function of the capital stock K and of efficient units of labour $N e^{gt}$: $Y = F(K, N_T e^{gt} + N_P e^{gt})$ where N_i the number of workers with contract i , with $i = T$ (temporary) or P (permanent).

The two types of contracts differ in three ways: first, permanent contracts end up with a smaller Poisson probability than temporary contracts $s_T > s_P$ ³³; second, permanent contracts are associated with firing costs f ; third, coherently with the model of the previous section, implicit heterogeneity leads to tougher selection of permanent workers, hence the cost of recruitment of permanent workers γ_P is higher than the cost of recruitment of temporary workers γ_T . It is first assumed that temporary contracts cannot be renewed, this assumption is relaxed in Wasmer (1999, Section 5). We also relax this assumption in next sub-section.

Consistent with a balanced growth model, we assume the existence of a constant returns to scale matching technology with two types of jobs, defined as follows: the total number of contracts is the constant returns to scale function $h(U, V)$. Consistent with the model in Section 3, workers, ranking permanent jobs before temporary jobs, choose the first kind of job so that there are $h_P = h(U, V_P)$ hires in permanent jobs, and $h_s = h(U, V) - h(U, V_P)$ hires in temporary jobs.

The rest of the model involves wage bargaining over the surplus of the firm and the worker, following Pissarides (1990); and we assume that the utility of leisure, wages and vacancy posting costs all grow at rate g .

This model has the following properties.

1. The growth of this economy leads to the so-called ‘‘capitalisation effect’’: as hiring is an investment leading to immediate costs and future profits, a higher level of productivity growth affects more the future benefits than it affects the current hiring costs. Hence, labour demands for both types of jobs potentially increases.
2. However, it increases faster for permanent jobs, since, by construction, those jobs have a longer survival rate: the capitalisation effect is stronger.

³³One interpretation is that long-term contracts have no definite duration, in which case s_P is an exogenous reallocation rate due to technical change. Short-term contracts are defined-duration contracts, and are terminated either by destruction with probability s_{shock} , or due to reaching the maximum duration, which is (imperfectly) proxied as another Poisson process with arrival rate s_{max} ; consequently $s_s = s_{max} + s_P$.

3. As unemployed workers have more chances to get a permanent job when long-term growth is higher, the threat point of employed workers in temporary jobs is improved. Hence, if the absolute value of the demand for temporary workers increases with growth, the relative demand decreases
4. There is a threshold level of growth g_l such that: if $g > g_l$, only permanent workers are hired; if $g < g_l$; both types coexist.

This latter result suggests that the need of temporary workers (useful to reduce hiring and screening costs) is not constant: it depends both on economic conditions of the business cycle and on long term factors. Above a threshold, temporary contracts would actually disappear in the absence of any new regulation imposing a single contract. On the contrary, for low growth rate values, the demand for temporary contracts would be so high that the transitional costs for firms would become high or even prohibitive.

We now relax the assumption that temporary contracts cannot be transformed into permanent contracts. Instead, we assume that a fraction of them can be upgraded into permanent contracts, with Poisson intensity τ . This specification is consistent with several interpretations, but one is consistent with the model of Section 3: workers with temporary contracts have not yet been screened by firms consistent with the fact that the recruitment cost of temporary workers γ_T is lower than the recruitment cost of permanent workers γ_P . The parameter τ can therefore be interpreted as the arrival of a signal of the quality of the workers, subsequently leading to the firm offering a permanent contract to the worker.

6.2 Simulations

Using the Model mentioned above, we are able to simulate results for the unemployment rate (u), the number of permanent employees (N_P), temporary employment (N_T) and the discounted value of utility for a worker that is either unemployed, in a temporary job or in a permanent job.

Results with two contracts (no transformation of temporary contracts)

<i>Productivity growth (g)</i>	0	0.01	0.02	0.03	0.04
u	0.122	0.120	0.118	0.117	0.115
N_P	0.790	0.810	0.831	0.854	0.880
N_T	0.0878	0.070	0.0507	0.0289	0.00438
Utility of unemployed	8.76	10.2	12.2	15.1	19.7
Utility of permanent workers	8.96	10.4	12.4	15.3	19.9
Utility of temporary workers	8.85	10.3	12.3	15.2	19.8

The results show us that unemployment decreases with growth along with the proportion of short term workers while the proportion of permanent or in this case ‘long term’ workers and the overall expected utilities increase significantly. Above $g = 0.0416$, the demand for temporary jobs disappears.

Results with 2 contracts and a transformation rate τ ($g = 0$)

<i>Transformation rate τ</i>	0	0.05	0.1	0.2	0.5	1
<i>u</i>	0.122	0.111	0.102	0.0897	0.0730	0.0638
<i>N_P</i>	0.790	0.760	0.759	0.780	0.837	0.880
<i>N_T</i>	0.0878	0.129	0.139	0.131	0.0900	0.0560
Utility of the unemployed	8.76	8.97	9.17	10.1	9.21	9.51
Utility of permanent workers	8.96	9.18	9.42	10.6	9.27	9.61
Utility of temporary workers	8.85	9.05	9.24	9.99	9.37	9.64

A higher transformation rate reduces the unemployment rate and increases the welfare of both permanent and temporary workers. Therefore, firm use temporary contracts to speed up the hiring process (formally, firms create more vacancies because the hiring cost of temporary workers is lower). If subsequently the contracts are transformed into permanent contracts, having two forms of employment contracts can be beneficial for the economy.

6.3 Empirical test: the role of growth on the relative demand for temporary contracts

We now proceed to some econometric analysis of the ideas developed so far. First, we will investigate, in a panel of OECD countries³⁴, the role of the different components of employment protection, running a regression like

$$Temp_{c,t} = C + \beta_1 EPL_{c,t}^{REG} + \beta_2 EPL_{c,t}^{TEMP} + \beta_3 EPL_{c,t}^{REG} \times growth_{c,t} + EPL_{c,t}^{TEMP} growth_{c,t} + FE_c + \varepsilon_{i,c,t} \quad (1)$$

Summary statistics of the variables are presented in table 4. Table 2 shows across different specifications that the restrictions on temporary contracts indeed generally reduce, as expected, the incidence of temporary contracts, while employment protection for regular contracts raises this demand. It is therefore essential to disentangle the two components, in line with the analysis

³⁴Countries in the sample are Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak, Republic, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States. The period is from 1985 to 2008.

in Cahuc et alii. (2011). As in Wasmer (1999), a higher growth rate tends to reduce the relative demand for temporary contracts. However, this result is not as robust as the table suggests. In Table 3 where the different countries are actually weighted by their employment share in the OECD, the signs of the components of EPL remain the same and significance too, but the effect of the growth rate of GDP is no longer significant. An interpretation is that, coherently with Section 3, GDP growth first increases the demand for temporary contracts (as firms are conservative) and then, for higher values of growth, start raising permanent employment. Interaction terms between growth and EPL do not show up very significantly. Theory would presumably suggest either a positive or a negative sign.

Table 2: Determinants of the incidence of temporary contracts

Dep. var: Portion of temporary employment in new jobs	Between			Within					Within+country trend		
	1	2	3	4	5	6	7	8	9		
Restrictions to temporary contracts	1.97 (1.66)	1.71 (1.58)	0.72 (1.65)	-2.77 (1.68)	-2.69 (1.67)	-2.67 (1.68)	-3.22** (1.26)	-3.30*** (1.27)	-3.54*** (1.32)		
Employment protection of regular contracts	6.69** (2.91)	6.90** (2.90)	7.59* (4.36)	3.11 (2.18)	3.29 (2.21)	3.27 (2.01)	11.50 (7.27)	11.55 (7.41)	11.31* (6.18)		
Growth rate		-1.31*** (0.49)	-1.49 (1.45)		-0.45*** (0.16)	-0.44 (0.54)		-0.25* (0.13)	-0.73 (0.58)		
Restrictions to temporary contracts×growth			0.31 (0.19)			-0.01 (0.05)			0.07 (0.07)		
Protection of reg. contracts×growth			-0.26 (0.58)			0.01 (0.21)			0.12 (0.29)		
Country dummies				Y	Y	Y	Y	Y	Y		
Country time trends							Y	Y	Y		
Nb. of observations	434	434	434	434	434	434	434	434	434		
Nb of clusters	27	27	27	27	27	27	27	27	27		
Adjusted R^2	0.194	0.220	0.222	0.205	0.221	0.217	0.611	0.616	0.617		

Least squares regressions, cluster-robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Employment protection and growth rates are lagged one year

Note: Employment protection data: OECD Employment Outlook 2004, ch. 2. Growth rates and incidence of temporary employment: OECD.stat extract.

Table 3: Determinants of the incidence of temporary contracts

Dep. var: Portion of temporary employment in new jobs	Between			Within			Within + country trend		
	1	2	3	4	5	6	7	8	9
Restrictions to temporary contracts	0.93 (1.91)	0.93 (1.89)	0.73 (2.13)	-3.82*** (1.34)	-3.78*** (1.32)	-3.76*** (1.35)	-3.56** (1.57)	-3.52** (1.54)	-3.55** (1.49)
Employment protection of regular contracts	12.84*** (3.44)	12.71*** (3.40)	17.83*** (5.50)	4.04** (1.78)	3.98** (1.79)	5.02** (2.05)	3.18 (3.98)	3.03 (3.96)	3.56 (3.65)
Growth rate		-0.63 (0.80)	2.52 (2.08)		-0.15 (0.17)	0.61 (0.59)		-0.09 (0.14)	0.54 (0.80)
Restrictions to temporary contracts×growth			0.12 (0.30)			-0.04 (0.06)			-0.02 (0.08)
Protection of reg. contracts×growth			-1.58* (0.92)			-0.29 (0.30)			-0.25 (0.44)
Country dummies				Y	Y	Y	Y	Y	Y
Country time trends							Y	Y	Y
Nb. of observations	434	434	434	434	434	434	434	434	434
Nb of clusters	27	27	27	27	27	27	27	27	27
Adjusted R^2	0.521	0.524	0.535	0.479	0.479	0.482	0.704	0.704	0.706

GLS estimation, weighted by country's average total declared workers over the period

Cluster-robust standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Employment protection and growth rates are lagged one year

Note: Employment protection data: OECD Employment Outlook 2004, ch. 2. Growth rates and incidence of temporary employment: OECD_stat extract.

7 Concluding comments

Our starting point was the consensus of many economists in favour of a single contract. After a review of the existing contracts in several OECD countries, and the discussion of the costs and benefits of a single contract, we are however left with mixed feelings. The economic literature has investigated and carefully documented many of the costs and benefits associated with employment protection: it favours some investments in specific skills but reduces labour turnover, raises the misallocation of productive units, raises mismatch of workers, may raise stress on-the-job, and finally leads to uncertainty in the termination of employment relations. But the jump to a single contract does not logically follow, since it will not necessarily eliminate all the costs of dualism. It further raises political economy questions, as compared to the alternative reforms discussed in this text.

Further, the costs of dualism are far less well understood than the costs of EPL. The co-existence of temporary and permanent contracts in itself certainly has some costs for workers. However, they are certainly not as well documented and probably much less important than: a) the costs of employment protection as such; b) the costs of removing one instrument (temporary contracts) to firms, given that temporary contracts have some benefits for firms, as argued in Barthélémy et alii. (2006). Section 5's results show that suppressing temporary contracts has a large negative employment effect and requires an important reform of the regular contract to be employment neutral. It is also shown that suppressing temporary contracts may have productivity enhancing effects by easing the allocation of skills within the firm. We confirm the claim by some firms and their representative that firing senior workers while keeping temporary ones is costly in terms of morale or legal costs. In this case, our model shows under which conditions a single contract could be beneficial. Section 5 also shows how temporary contracts can help firms to hire workers even when expecting low future growth.

The political economy of the single labour contract is complex too. Advertising labour market reforms using the “single labour contract” label is a way to insist on the convergence between different types of labour contracts and the removal of temporary contracts appears as the least costly solution. The ‘single labour contract’ is meant to be a *quid pro quo* (an exchange of something against something else, understood by the parties). By “single labour contract”, proponents of this measure probably mean “ambitious reforms of permanent contracts” with less protection, perhaps with compensation in other areas such as training rights. This may however be a *quiproquo* (a real misunderstanding): if this amounts to the disappearance of temporary contracts in exchange for an extended probation period, it is hard to believe that unions would favour this solution since fixed duration contracts are fairly well protected as emphasised in Cahuc et alii. (2012).³⁵ Further, if the argument in Section 5 (the fact that firms may find it

³⁵In that sense, the recent proposal made at the recent FRDB Conference (April 2012) to define an “Contrat for Equal Opportunity” is a certainly a way to reduce the quiproquo.

costly to layoff permanent workers when they retain temporary workers) is certainly a new and underestimated cost of dualism, it may be unlikely to convince unions either. A possibly more sensible strategy for a reform limiting dualism consists on raising incentives to create permanent contracts and reduce incentives to create temporary contracts. This has recently inspired the round of negotiations between employers and unions in France (January 2013). The agreement implements an additional taxation of short duration temporary contracts (less than three months) if the temporary contract is not transformed into a permanent one, in exchange of a reform of the procedure of collective layoffs.

A last remark is that the proponents of a single labour contract propose to introduce severance payment increasing with seniority in the current job. It must be remembered however that such seniority-based rights would also reduce incentives to professional mobility, as it is currently the case in several European countries where job-to-job mobility is particularly low. It may be better to favour severance payment increasing with seniority in the career, not in the current firm.

The conclusion of this report is therefore that in terms of political economy and the capacity to drive an ambitious reform, the concept of flexicurity, with lower employment protection and high unemployment benefits securing consumption and welfare, combined with incentives to accept job offers, and supplemented with active labour market policies and efficient training, is more adapted than the concept of a single labour contract.

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Appendix

A Data Appendix

Table 4: Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Portion of temp. empl. in new jobs	30.22%	15.97%	3.72%	78.24%
Growth rate	2.95%	2.28%	-6.17%	10.92%
EPL of regular contracts	2.26	0.83	0.17	5.00
Restrictions to temp. contracts	2.24	1.52	0.25	5.38

Country	Freq.	Year	Freq.
Australia	4	1986	10
Austria	14	1987	11
Belgium	23	1988	11
Canada	12	1989	11
Czech Republic	15	1990	11
Denmark	23	1991	12
Finland	12	1992	12
France	23	1993	12
Germany	15	1994	16
Greece	23	1995	18
Hungary	12	1996	18
Ireland	23	1997	23
Italy	23	1998	24
Japan	23	1999	24
Korea	5	2000	23
Mexico	11	2001	26
Netherlands	23	2002	24
Norway	13	2003	24
Poland	8	2004	26
Portugal	23	2005	25
Slovak Republic	15	2006	25
Spain	22	2007	24
Sweden	12	2008	24
Switzerland	11		
Turkey	18		
United Kingdom	23		
United States	5		
Total	434		434

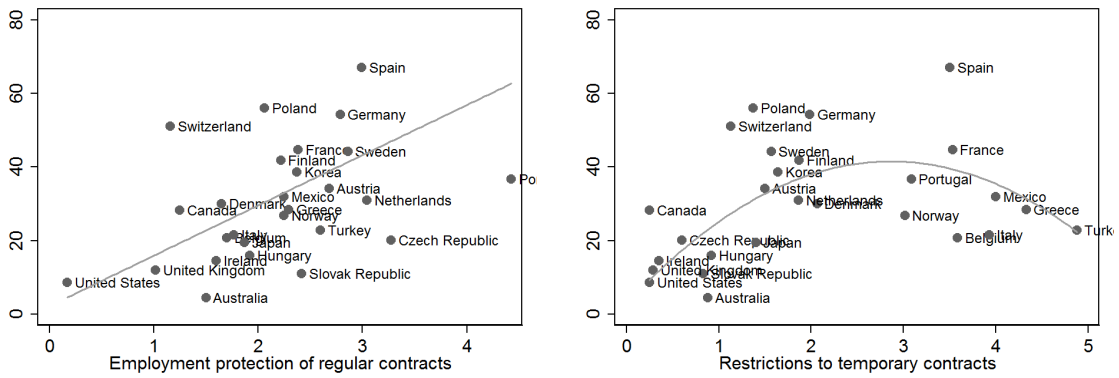


Figure 17: Temporary employment as percentage of all new jobs vs. two employment protection dimensions

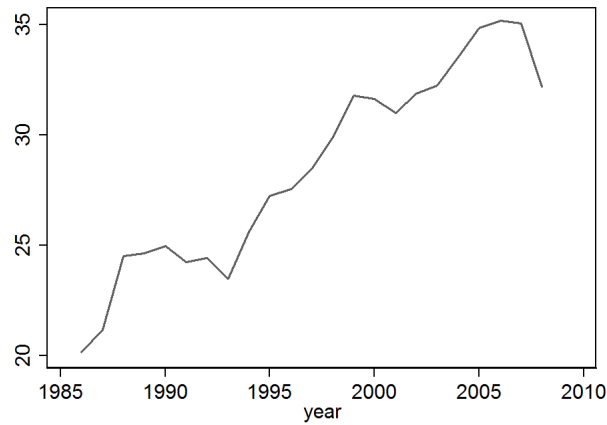


Figure 18: Temporary employment as percentage of all new jobs (average of all OECD countries)

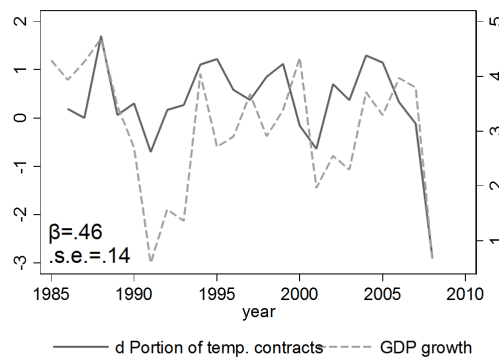


Figure 19: Change in temporary employment as percentage of all new jobs and GDP growth (average of all OECD countries)

B OECD employment protection index

The three main components of *individual* protection index are:

1. The difficulty of dismissal: The conditions to be met for a dismissal to be considered as “fair” considering the professional and personal situation of the employee.
2. The procedural burden of the dismissal for the employer: They include the legal possibilities for the worker to challenge the decision and third party involvement in the process.
3. The notice and severance pay for no-fault dismissal: The mandatory notification period before the end of the contract and the length of the pay after.

Almost all OECD countries introduced additional rules applicable to *collective* dismissals. The most recent version of the index takes these rules into account. Finally, temporary contracts can be viewed as a way to circumvent standard employment protection legislation. OECD countries have also rules restraining the use of temporary employment to certain types of work and certain durations, leading to a more effective EPL in other dimensions. The final OECD EPL index also measures the cost of these additional burdens on firms. The summary EPL indicator is $EPL = 5/12 * EPL_{individual} + 5/12 * EPL_{temporary} + 2/12 * EPL_{collective}$.

Table B.1: Total EPL indices in OECD countries

Country	Mean EPL	Country	Mean EPL
United States	0,66	Belgium	2,50
New Zealand	1,04	Netherlands	2,52
United Kingdom	1,05	Slovak Republic	2,53
Canada	1,14	Norway	2,67
Ireland	1,25	Sweden	2,68
Australia	1,47	Germany	2,80
Switzerland	1,60	France	2,85
Hungary	1,61	Spain	3,04
Denmark	1,83	Turkey	3,36
Poland	1,92	Italy	3,38
Czech Republic	1,94	Greece	3,50
Finland	2,15	Portugal	3,66
Austria	2,39		

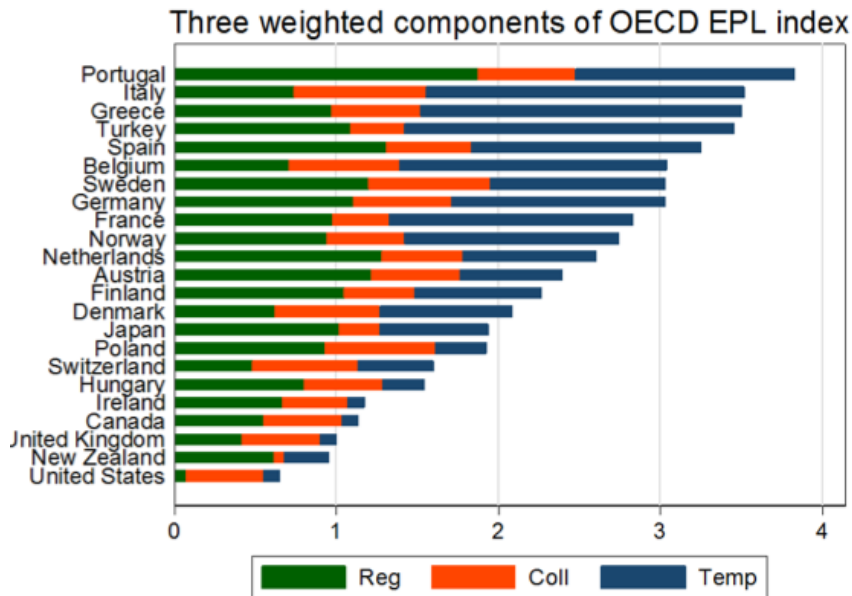


Figure B.1: Three dimensions of OECD EPL indicator

C CNE

An example: the case of the CNE in France

The New Employment Contract reform is a good example of how legal apparatuses can become barriers to the implementation of new forms of contracts.

The New Employment Contract (CNE) reform (ordinance n°2005-893) was passed into law on August 2005 after its ratification by the French Parliament. However, rapidly, the workers' unions who believed it to be anti-constitutional contested the reform and seized the French administrative high court (Conseil d'Etat) in order to have it repealed. The unions argued that the CNE was contrary to convention 158 of the International Labour Organization (ILO). International Treaties are considered to be superior in hierarchy to national laws in France (article 55 of the French Constitution) and since 1989 with the *Nicolo* judgement³⁶, the French Conseil d'Etat has been granted the power to annul a law that contradicts an international treaty.

On October 19th 2005, the Conseil d'Etat ruled in favour of the CNE, arguing that the reform was not contrary to the convention 158 of the ILO. The Conseil d'Etat judged that the period of employment consolidation could be compared to a period of 'qualifying period of employment' (authorised in article 2 of the convention). It also stated that the two-year duration of the trial period could be considered as '*reasonable*' (respecting article 2 of the convention).

³⁶CE, 20 Octobre 1989, Nicolo

Finally, regarding the termination clauses of the CNE, the judges of the Conseil d'Etat rejected the arguments given by the unions that the CNE could lead to abusive termination decisions. They highlighted the fact that workers could contest termination in front of a national judge who would determine whether or not the termination had been wrongful.

On April 28th 2006, despite the decision given by the Conseil d'Etat, the labour court of Longjumeau (conseil des prud'hommes de Longjumeau) ruled that the CNE was contrary to convention 158 and was therefore void. The Longjumeau decision was brought to the Paris Court of Appeals. On July 6th 2007, the Paris court of Appeals ruled in favour of the Longjumeau decision, against the CNE. The judges considered that the two-year duration of the probationary period guaranteed by the ordinance could not be considered '*reasonable*'.

On November 14th 2007, the ILO published a report³⁷ stating that the CNE was contrary to convention 158. The ILO Committee felt that the policy considerations underlying the establishment of the CNE had little relevance to the situations covered by Article 2, paragraph 2, and that the purpose of characterising the period of employment consolidation as a qualifying period of employment was essentially to enable employees under the CNE to be excluded from certain provisions of the Convention. Furthermore, the Committee was unable to conclude that a consolidation period as long as two years was reasonable. Finally the Committee found that the Ordinance n° 2005-893 significantly departed from the workers' protections' requirements of article 4. This decision unlike the ones successively made by the Conseil d'Etat and the court of Appeals was not legally binding as the ILO lacks coercive mechanisms. However, it increased the likelihood for other French courts to rule against the CNE. Anticipating a negative ruling on the CNE from a higher court, the French Parliament abrogated the 2005 ordinance on the CNE by law (article 9 of law n°2008-596). All the CNE contracts were automatically reclassified as traditional permanent contracts (CDI). Finally, on the 1st of July 2008, the Social Chamber of the Cour de Cassation (High French court) confirmed the decisions made by the Paris court of Appeals and rendered the CNE reform illegal.

D ANDRH

Extract Proposition 2: http://www.andrh.fr/content/download/39573/513020/file/propositions_2011.pdf

“En finir avec la précarité, grâce à l’instauration d’un contrat de travail unique, sans notion de durée ni de motif : le CTU 2 L’instauration d’un contrat de travail unique (CTU) est une idée qui fait son chemin depuis quelques années afin de lutter contre l’utilisation excessive des CDD et de l’intérim, et simplifier l’application du code du travail. % Le contrat de travail unique s’énonce sans référence au temps; il est, par nature, à durée indéterminée et se substitue à tous les CDI, CDD, contrats de missions, contrats saisonniers, actuellement en vigueur. % Le salarié

³⁷ILO, «Note on Convention n°158 and Recommendation n°166 » 2009, <http://www.ilo.org/wcmsp5/groups/public/@ed_norm/@normes/documents/meetingdocument/wcms_100768.pdf>.

est embauché pour une fonction ou un poste, et à un niveau de qualification et de rémunération explicitement mentionnés. % Les motifs de rupture du CTU sont : la faute du salarié, la rupture d'un commun accord ou la fin de l'activité à laquelle ce salarié avait été affecté. % En deçà de 2 ans d'ancienneté : • leur indemnité de licenciement est égale à 10% de l'ensemble des rémunérations perçues au cours de la durée écoulée du contrat; • le préavis est proportionnel à la durée du contrat écoulé; • l'entreprise aide le salarié licencié à la recherche d'emploi (aide à la rédaction de CV, mises en relation); • les titulaires du CTU de moins de 18 mois ne relèvent pas du périmètre d'un éventuel Plan de Sauvegarde de l'Emploi.”

E Technical Appendix I: model with constant aggregate productivity

E.1 Second period decision

E.1.1 Value functions

General values (using the ε subscript to show that G depends on ε)

Value of a permanent contract

$$V_P(\varepsilon) = V_0 + (1 - q_P) \left[\int_{w-F}^y (\tilde{y} - w) dG_\varepsilon(\tilde{y}) - FG_\varepsilon(w - F) \right]$$

Value of a temporary contract

$$V_T(\varepsilon) = V_0 + (1 - q_T) \left[\int_w^y (\tilde{y} - w) dG_\varepsilon(\tilde{y}) - FG_\varepsilon(w) \right]$$

Uniform distribution of \tilde{y}

$$G_\varepsilon(\tilde{y}) = \frac{\tilde{y} - y(1 - \varepsilon)}{y - y(1 - \varepsilon)} = 1 + \frac{\tilde{y} - y}{\varepsilon y}$$

$$g_\varepsilon(\tilde{y}) = \frac{1}{\varepsilon y}$$

Values functions in case of uniform Permanent contract

$$V_P(\varepsilon) = V_0 + (1 - q_P) \left[\frac{(y - w + F)^2}{2y\varepsilon} - F \right]$$

Temporary contract

$$V_T(\varepsilon) = V_0 + (1 - q_T) \frac{(y - w)^2}{2y\varepsilon}$$

Values functions in case of uniform G if all workers are kept Permanent contract

$$V_P^l(\varepsilon) = V_0 + (1 - q_P) \left(y - w - \frac{y\varepsilon}{2} \right)$$

Note that $V_P^l(\varepsilon)$ is strictly higher than $V_T^l(\varepsilon)$ since there are no layoffs.

E.2 First period decision

E.2.1 Thresholds

Threshold ε_l to hiring permanent workers that will be kept with certainty: $y(1 - \varepsilon_l) = w - F$

$$\varepsilon_l = 1 - \frac{w - F}{y}$$

Threshold ε^* to hiring permanent or temporary workers: $V_P(\varepsilon^*) = V_T(\varepsilon^*)$

$$\varepsilon^* = \frac{1}{2yF} \left[(y - w + F)^2 - \frac{1 - q_T}{1 - q_P} (y - w)^2 \right]$$

Threshold ε_h to hiring a temporary worker

$$V_T(\varepsilon_h) = H$$

$$\varepsilon_h = (1 - q_T) \frac{(y - w)^2}{2y(H - V_0)}$$

E.2.2 Hired workers

(Assuming a uniform distribution of productivity with density $\frac{1}{\varepsilon_{\max}}$.)

Attribution of permanent contracts

$$N_P = \frac{\varepsilon^*}{\varepsilon_{\max}}$$

Attribution of temporary contracts

$$N_T = \frac{\varepsilon_h - \varepsilon^*}{\varepsilon_{\max}}$$

Rejected applications

$$N_R = 1 - \frac{\varepsilon_h}{\varepsilon_{\max}}$$

Incidence of temporary workers

$$\begin{aligned} \frac{N_T}{N_P + N_T} &= \frac{\frac{\varepsilon_h - \varepsilon^*}{\varepsilon_{\max}}}{\frac{\varepsilon^*}{\varepsilon_{\max}} + \frac{\varepsilon_h - \varepsilon^*}{\varepsilon_{\max}}} = 1 - \frac{\varepsilon^*}{\varepsilon_h} \\ &= 1 - \frac{H}{F} \left[\frac{1}{1 - q_T} \left(1 + \frac{F}{y - w} \right)^2 - \frac{1}{1 - q_P} \right] \end{aligned}$$

E.2.3 Second period firing decisions

Probability of keeping workers as function of ε Probability of firing workers below ε_l

$$p_l = 0$$

Probability of firing workers in permanent contracts (with $\varepsilon > \varepsilon_l$)

$$p_P(\varepsilon) = G_\varepsilon(w - F) = 1 - \frac{y - w + F}{\varepsilon y} = 1 - \frac{\varepsilon_l}{\varepsilon}$$

Probability of firing workers in temporary contracts (with $\varepsilon > \varepsilon_l$)

$$p_T(\varepsilon) = G_\varepsilon(w) = 1 - \frac{y - w}{\varepsilon y}$$

Fraction of hired workers kept in second period How many freshly hired workers are kept after productivity is revealed?

Workers hired as permanent and kept as permanent:

$$\begin{aligned} N_P^k &= \int_0^{\varepsilon_l} (1 - q_P) \frac{1}{\varepsilon_{\max}} d\tilde{\varepsilon} + \int_{\varepsilon_l}^{\varepsilon^*} (1 - q_P) (1 - p_P(\varepsilon)) \frac{1}{\varepsilon_{\max}} d\tilde{\varepsilon} \\ &= (1 - q_P) \frac{\varepsilon_l}{\varepsilon_{\max}} [1 + \ln(\varepsilon^*) - \ln(\varepsilon_l)] \end{aligned}$$

Workers hired as permanent that quit:

$$N_P^q = q_P I_P = q_P \frac{\varepsilon^*}{\varepsilon_{\max}}$$

Workers hired as permanent and fired:

$$\begin{aligned} N_P^f &= \int_{\varepsilon_l}^{\varepsilon^*} (1 - q_P) p_P(\varepsilon) \frac{1}{\varepsilon_{\max}} d\tilde{\varepsilon} \\ &= \frac{1 - q_P}{\varepsilon_{\max}} (\varepsilon^* - \varepsilon_l (1 + \ln(\varepsilon^*) - \ln(\varepsilon_l))) \end{aligned}$$

Workers hired as temporary and kept as temporary:

$$\begin{aligned} N_T^k &= \int_{\varepsilon^*}^{\varepsilon_h} (1 - q_T) (1 - p_T(\varepsilon)) \frac{1}{\varepsilon_{\max}} d\tilde{\varepsilon} \\ &= (1 - q_T) \frac{y - w}{y\varepsilon_{\max}} (\ln(\varepsilon_h) - \ln(\varepsilon^*)) \end{aligned}$$

Workers hired as temporary who quit

$$N_T^q = q_T N_T = q_T \frac{\varepsilon_h - \varepsilon^*}{\varepsilon_{\max}}$$

Workers hired as temporary and not renewed

$$\begin{aligned} N_T^n &= \int_{\varepsilon^*}^{\varepsilon_h} (1 - q_T) p_T(\varepsilon) \frac{1}{\varepsilon_{\max}} d\tilde{\varepsilon} \\ &= \frac{(1 - q_T)}{\varepsilon_{\max}} \left(\varepsilon^* - \varepsilon_l - \frac{y - w}{y} (\ln(\varepsilon_h) - \ln(\varepsilon^*)) \right) \end{aligned}$$

Equilibrium stocks In an infinite period setting, stocks of workers of each productivity level have to be stable in equilibrium.

Consider that each period, the exogenous stock of new recruits (of any ε) is R . The number of new recruits of any specific ε is thus $\frac{R}{\varepsilon_{\max}}$. The stock of workers with productivity ε is $S(\varepsilon)$. The probability of shock to the productivity for any ε is q_S .

If $\varepsilon < \varepsilon_l$, the equilibrium requires that

$$\frac{R}{\varepsilon_{\max}} = S_l(\varepsilon) q_P$$

$$S_l(\varepsilon) = \frac{R}{\varepsilon_{\max} q_P}$$

If $\varepsilon_l < \varepsilon < \varepsilon^*$

$$S_P(\varepsilon) = \frac{R}{\varepsilon_{\max} [q_P + q_S p_P(\varepsilon)]} = \frac{R}{\varepsilon_{\max} [q_P + q_S (1 - \frac{\varepsilon_l}{\varepsilon})]}$$

(assuming that dt is short, we ignore the timing of firing/layoff and drop cross terms).

If $\varepsilon^* < \varepsilon < \varepsilon_h$

$$S_T(\varepsilon) = \frac{R}{\varepsilon_{\max} [q_T + q_S p_T(\varepsilon)]} = \frac{R}{\varepsilon_{\max} [q_T + q_S (1 - \frac{y-w}{\varepsilon y})]}$$

The stock of permanent workers is:

$$S_P = \int_0^{\varepsilon_l} S_l(\varepsilon) d\varepsilon + \int_{\varepsilon_l}^{\varepsilon^*} S_P(\varepsilon) d\varepsilon$$

$$S_P = \frac{R\varepsilon_l}{\varepsilon_{\max}(q_P + q_S)} \left\{ \frac{q_S}{q_P} + \frac{\varepsilon^*}{\varepsilon_l} + \frac{q_S}{q_P + q_S} \ln \left(\frac{\varepsilon^*}{\varepsilon_l} \left(1 + \frac{q_S}{q_P} \right) - \frac{q_S}{q_P} \right) \right\}$$

The stock of temporary workers

$$S_T = \int_{\varepsilon^*}^{\varepsilon_h} S_T(\varepsilon) d\varepsilon$$

$$S_T = \frac{R}{\varepsilon_{\max}(q_T + q_S)} \left[(\varepsilon_h - \varepsilon^*) + \theta \ln \left(\frac{\varepsilon_h - \theta}{\varepsilon^* - \theta} \right) \right]$$

where $\theta = \frac{1-w}{1+\frac{y}{q_S}}$.

Welfare analysis Firm

$$\Pi_F = \int_0^{\varepsilon_l} V_P^l(\varepsilon) dF(\varepsilon) + \int_{\varepsilon_l}^{\varepsilon^*} V_P(\varepsilon) dF(\varepsilon) + \int_{\varepsilon^*}^{\varepsilon_h} V_T(\varepsilon) dF(\varepsilon)$$

$$\Pi_F = \frac{1}{\varepsilon_{\max}} \left[(1 - q_P) \left\{ \begin{aligned} &\varepsilon_l(y - w) - \frac{y}{2}\varepsilon_l^2 \\ &+ \frac{(y-w+F)^2}{2y} \left(\ln \left(\frac{\varepsilon^*}{\varepsilon_l} \right) \right) - F(\varepsilon^* - \varepsilon_l) \end{aligned} \right\} \right. \\ \left. + (1 - q_T) \frac{(y-w)^2}{2y} \left(\ln \left(\frac{\varepsilon_h}{\varepsilon^*} \right) \right) + \varepsilon_h V_0 \right]$$

Workers:

$$\begin{aligned} \Pi_W &= (N_P^k + N_T^k) w \\ &= \left((1 - q_P) \varepsilon_l \left[1 + \ln \left(\frac{\varepsilon^*}{\varepsilon_l} \right) \right] + (1 - q_T) \frac{y - w}{y} \ln \left(\frac{\varepsilon_h}{\varepsilon^*} \right) \right) \frac{w}{\varepsilon_{\max}} \end{aligned}$$

Total welfare

$$\Omega = \Pi_F + \Pi_W = \frac{1}{\varepsilon_{\max}} \left\{ (1 - q_P) \left[\varepsilon_l y - \frac{y}{2}\varepsilon_l^2 + \frac{(y+F)^2 - w^2}{2y} \ln \left(\frac{\varepsilon^*}{\varepsilon_l} \right) - F(\varepsilon^* - \varepsilon_l) \right] \right. \\ \left. + (1 - q_T) \ln \left(\frac{\varepsilon_h}{\varepsilon^*} \right) \frac{y^2 - w^2}{y^2} + \varepsilon_h V_0 \right\}$$

F Technical Appendix II: random aggregate productivity

Now, the productivity of period 2 is uncertain. There is a probability p_m of adverse shock, giving an aggregate productivity of y^- .

F.1 Value functions

Uniform distribution of \tilde{y}

$$G_{\varepsilon,y}(\tilde{y}) = 1 + \frac{\tilde{y} - y}{\varepsilon y} ; G_{\varepsilon,y^-}(\tilde{y}) = 1 + \frac{\tilde{y} - y^-}{\varepsilon y^-}$$

$$g_{\varepsilon,y}(\tilde{y}) = \frac{1}{\varepsilon y} ; g_{\varepsilon,y^-}(\tilde{y}) = \frac{1}{\varepsilon y^-}$$

F.2 Values functions in case of uniform

Permanent contract

$$V_P(\varepsilon) = (1 - q_P) \left\{ (1 - p_m) \frac{(y - w + F)^2}{2y\varepsilon} + p_m \frac{(y^- - w + F)^2}{2y^-\varepsilon} - F \right\}$$

Temporary contract

$$V_T(\varepsilon) = (1 - q_T) \left\{ (1 - p_m) \frac{(y - w)^2}{2y\varepsilon} + p_m \frac{(y^- - w)^2}{2y^-\varepsilon} \right\}$$

Values functions in case of uniform G if all workers are kept Permanent contract

$$V_P(\varepsilon) = (1 - q_P) \left\{ \frac{2 - \varepsilon}{2} [(1 - p_m)y + p_my^-] - w \right\}$$

Note that $V_P(\varepsilon)$ is strictly higher than $V_T(\varepsilon)$ since there are no layoffs.

F.3 First period decision

F.3.1 Thresholds

Threshold ε_l to hiring permanent workers that will be kept with certainty:

$$p_my(1 - \varepsilon_l) + (1 - p_m)y^-(1 - \varepsilon_l) = w - F$$

$$\varepsilon_l = 1 - \frac{w - F}{p_my + (1 - p_m)y^-}$$

Threshold ε^* to hiring permanent or temporary workers

$$V_P(\varepsilon^*) = V_T(\varepsilon^*)$$

$$\varepsilon^* = \frac{1}{2F} \left[\begin{array}{l} (1-p_m) \frac{(y-w+F)^2}{y} + p_m \frac{(y^- - w + F)^2}{y^-} \\ - \frac{(1-q_T)}{(1-q_P)} \left\{ (1-p_m) \frac{(y-w)^2}{y} + p_m \frac{(y^- - w)^2}{y^-} \right\} \end{array} \right]$$

Threshold ε_h to hiring a temporary worker

$$V_T(\varepsilon_h) = H$$

$$\varepsilon_h = \frac{(1-q_T)}{2H} \left\{ (1-p_m) \frac{(y-w)^2}{y} + p_m \frac{(y^- - w)^2}{y^-} \right\}$$

F.3.2 Ratio of hired workers

Assuming a distribution of productivities $K(\varepsilon) = \frac{\varepsilon}{\varepsilon_{\max}}$, $k(\varepsilon) = \frac{1}{\varepsilon_{\max}}$.

Attribution of permanent contracts

$$N_P = K(\varepsilon^*) = \frac{\varepsilon^*}{\varepsilon_{\max}}$$

Attribution of temporary contracts

$$N_T = K(\varepsilon_h) - K(\varepsilon^*) = \frac{\varepsilon_h - \varepsilon^*}{\varepsilon_{\max}}$$

Rejected applications

$$N_R = 1 - K(\varepsilon_h) = 1 - \frac{\varepsilon_h}{\varepsilon_{\max}}$$

Incidence of temporary contracts

$$\begin{aligned} \frac{N_T}{N_T + N_P} &= \frac{\frac{\varepsilon_h - \varepsilon^*}{\varepsilon_{\max}}}{\frac{\varepsilon_h - \varepsilon^*}{\varepsilon_{\max}} + \frac{\varepsilon^*}{\varepsilon_{\max}}} = 1 - \frac{\varepsilon^*}{\varepsilon_h} \\ &= 1 + \frac{H}{F} \left(\frac{1}{1-q_P} - \frac{1}{1-q_T} \frac{(1-p_m) \frac{(y-w+F)^2}{y} + p_m \frac{(y^- - w + F)^2}{y^-}}{(1-p_m) \frac{(y-w)^2}{y} + p_m \frac{(y^- - w)^2}{y^-}} \right) \end{aligned}$$

F.3.3 Second period firing decisions

Probability of keeping workers as function of ε and y Probability of firing workers below

ε_l

$$p_l = 0$$

Probability of firing workers in permanent contracts (with $\varepsilon > \varepsilon_l$)

$$p_P(\varepsilon, y) = G_{\varepsilon, y}(w - F) = 1 - \frac{y - w + F}{\varepsilon y} ; p_P(\varepsilon, y^-) = 1 - \frac{y^- - w + F}{\varepsilon y^-}$$

Probability of firing workers in temporary contracts (with $\varepsilon > \varepsilon_l$)

$$p_T(\varepsilon, y) = G_{\varepsilon, y}(w) = 1 - \frac{y - w}{\varepsilon y} ; p_T(\varepsilon, y^-) = 1 - \frac{y^- - w}{\varepsilon y^-}$$

Fraction of hired workers kept in second period Workers hired as permanent and kept as permanent:

$$N_P^k(y) = \frac{1 - q_P}{\varepsilon_{\max}} \left[\varepsilon_l + \frac{y - w + F}{y} (\ln(\varepsilon^*) - \ln(\varepsilon_l)) \right]$$

$$N_P^k(y^-) = \frac{1 - q_P}{\varepsilon_{\max}} \left[\varepsilon_l + \frac{y^- - w + F}{y^-} (\ln(\varepsilon^*) - \ln(\varepsilon_l)) \right]$$

Workers hired as permanent that quit:

$$N_P^q = q_P N_P = q_P \frac{\varepsilon^*}{\varepsilon_{\max}}$$

Workers hired as permanent and fired:

$$N_P^f(y) = N_P - N_P^f - N_P^k(y)$$

$$= \frac{1 - q_P}{\varepsilon_{\max}} \left[\varepsilon^* - \varepsilon_l - \frac{y - w + F}{y} (\ln(\varepsilon^*) - \ln(\varepsilon_l)) \right]$$

$$N_P^f(y^-) = \frac{1 - q_P}{\varepsilon_{\max}} \left[\varepsilon^* - \varepsilon_l - \frac{y^- - w + F}{y^-} (\ln(\varepsilon^*) - \ln(\varepsilon_l)) \right]$$

Workers hired as temporary and kept as temporary:

$$N_T^k(y) = (1 - q_T) \frac{y - w}{y \varepsilon_{\max}} (\ln(\varepsilon_h) - \ln(\varepsilon^*))$$

$$N_T^k(y^-) = (1 - q_T) \frac{y^- - w}{y^- \varepsilon_{\max}} (\ln(\varepsilon_h) - \ln(\varepsilon^*))$$

Workers hired as temporary who quit

$$N_T^q = q_T N_T = q_T \frac{\varepsilon_h - \varepsilon^*}{\varepsilon_{\max}}$$

Workers hired as temporary and not renewed

$$\begin{aligned} N_T^n &= I_T - I_T^q - I_T^k(y) \\ N_T^n &= \frac{1 - q_T}{\varepsilon_{\max}} \left[\varepsilon_h - \varepsilon^* - \frac{y - w}{y} (\ln(\varepsilon_h) - \ln(\varepsilon^*)) \right] \end{aligned}$$