Job Security and Severance Pay Exemption in Times of Recession

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Abstract: This paper compares duration and costs of two different procedures to dissolve permanent worker contracts. The two procedures make up the dual system of counter-cyclical labor market policy in the Netherlands. One is common to most modern economies. It seeks approval of the civil court that determines the associated severance pay. The other is unique. It exists since WWII and allows firms in demise to request dismissal approval for tenured workers from a public employment service. Approval comes with severance pay exemption for the workers concerned. An equilibrium search model evaluates this dual policy to have positive employment effects, especially during recessions. A new data set identifies key differences in incidence, procedural durations, and firing costs distributions for permanent contract terminations of individual workers with and without the severance pay exemption during the period 2006-2009. We find that a labor market with a dual system of flexible counter-cyclical labor market policy functions better in recessions.

Keywords: social insurance, flexibility, counter-cyclical labor market policy.

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"The effect of laws on employment depends on the state of demand."
Ed Lazear (1990, p.705)

1. Introduction

For individual workers job security is one of the most attractive amenities of a job. In surveys on relevant employment features job security ranks invariably above career perspectives and attractive remuneration. But economic theory and empirical evidence are ambiguous about the labor market consequences of job security programs. These programs may provide employment stability to incumbent workers, especially to those with permanent contracts, but at the same time they make employers more to reluctant to hire, induce capital-labor substitution, and condense entry. Recent empirical research in the US estimates the social costs, in possibly lower employment, wages, and productivity of wrongful discharge laws and disability acts.[1] Empirical research in Europe predominantly studies how employment protection legislation influences labor market participation and unemployment duration.[2]

Even though employment protection laws are meant to be effective during bad times for groups of vulnerable workers, in general they are not easily adjustable to changing economic conditions. During the Great Recession some countries' labor markets performed better than others. Recent applied studies suggest that those differences arise because some labor markets have flexible counter-cyclical employment policies. These policies aim to return the economy back to full employment and are specifically designed to become effective for individual workers or firms during times of economic malaise. Such policies are more successful in lowering the rise of unemployment during recessions than inert job security legislation.[3]

[1] See, for example, Acemoglu and Angrist (2001), Autor, Donahue and Schwab (2006).
[2] See, for example, Boeri and Van Ours (2008). For an overview see the OECD Employment Outlook 2013.
[3] Burda and Hunt (2011), for example, show that Germany generally accommodates reductions in labor demand more along the intensive margin. They argue that the *short time compensation* policy together with careful pre-crisis hiring and wage moderations.

In this paper we study the efficacy of the severance pay exemption policy that helps firms to overcome insolvency risk in bad economic times. This is a specific counter-cyclical element of Dutch labor market policy. It remains from the First Enforcement Resolution ('*Eerste Uitvaardigingsbesluit*'), enacted by the German occupying forces on June 11th 1940. After the end of World War II the Dutch government upheld this resolution through the Extraordinary Labor Relations Decree (ELRD). Although heavily debated in parliament for more than six decades, the decree still holds today.

Dutch firms are obliged to seek *a priori* permission to terminate permanent worker contracts[4], and as a consequence of the ELRD they have two ways to do so. One is the common route via the civil court system[5], the other is to request permission from the public employment service (PES).[6] When permission is granted in the latter case the firm is relieved from the obligation to pay severance. The Dutch labor market is a unique institution to evaluate the severance pay exemption policy. We study the efficacy, duration and costs of the two separate routes to lay-off permanent workers. An equilibrium search model evaluates this dual policy to have positive employment effects, especially during recessions. A new representative data set on individual dismissal procedures for the period 2006-2009 is collected specifically to study which employers and employees are subject to either of these two choices, and what are the differences in terms of procedural durations and firing costs between them. We find that the average duration of court procedures is somewhat shorter than public employment service procedures, but the variance of court procedure durations is higher. Moreover, as a result of the possibility to obtain severance pay exemption the expected firing costs as well as the variance of these costs are much higher. The incidence of both procedures is about equal during periods of expansion. But in times of contraction the PES route is allowed for more

[4] A third option is by mutual consent: approximately 20 percent of all permanent job endings in the Netherlands result from mutual consent.

[5] Alternative names for the civil court are "cantonal judge" or "Justice of Peace".

[6] Today the Labor Inspectorate is a public employment service (PES) that is officially called *Uitvoeringsinstituut Werknemers Verzekeringen, or UWV WERKbedrijf*. It has about 100 local establishments throughout the Netherlands.

often. Given the differences in duration and costs between the two procedures, we conclude that a labor market with this dual system of flexible counter-cyclical labor market policy functions better in recessions.

The outline of the paper is as follows. In Section 2 we will briefly discuss the history and some of the specific institutional aspects of the Dutch labor market. The equilibrium search model will be presented in Section 3. In Section 4 we report the differences in procedural durations. In Section 5 we present estimates of firing costs differences. In Section 6 we investigate the possibility of endogeneity of the probability for a firm to obtain severance pay exemption and its consequences for the robustness of our results. Section 7 concludes.

2. Institutional aspects of the Dutch labor market

It is well known that job protection against individual dismissal of workers with permanent employment contracts in the Netherlands is one of the strictest in the EU and that the rate of temporary workers is one of the highest indeed (OECD, 2013). According to existing labor market theory countries with strict employment protection laws will be characterized by high levels of temporary employment and workers who can claim higher wages. In theory this leads to high unemployment rates, low employment participation levels, and reduced adoption of new technologies which yields low worker productivity. Moreover, differences in firing costs can account for a significant proportion of differences in labor market fluctuations observed in OECD data (*cf.* Llosa *et al.* (2012)). In the Netherlands, however, labor market participation is the highest in the EU, long-term labor market participation growth and labor productivity exceed the EU average, and the unemployment rate is structurally among the lowest in the EU (Figure 1).[7] These are contradictory findings. Despite strict job security

[7] The EU15 refers to the number of member countries of the European Union prior to May 1st, 2004. The countries are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and the United Kingdom.

legislation and high firing costs the Dutch labor market appears resilient against deep recessions.[8]

[INSERT FIGURE 1 ABOUT HERE]

Preventive dismissal checks and severance pay exemption rules are characteristic features of the Dutch labor market since WWII. But they have been overlooked in most of the existing scholarly research on international comparisons of labor market institutions, job security, and social insurance.[9] Legal provision requires checking the legality, validity, carefulness and reasonability of a dismissal request *before* a permanent worker contract can actually be terminated. Two different institutions perform these checks: the civil courts and the public employment service.

The civil court

The introduction of the Civil Code of Law in 1838 can be regarded as a milestone in the history of labor market legislation in the Netherlands. Inspired by the French Code Civil of 1804, the Dutch Civil Code introduced a new national civil law that contained three articles regarding the employment relationship between an employer and an employee. Originally, these articles were all written to protect the employer, rather than the employee. The introduction of the first legislative measures that aimed for the protection of the employee was not until 1909 when the Law on Employment Contracts was enacted. The basis of Dutch labor law is Chapter 7 of the Civil Code that is used by civil courts to deal with controversies on employment provisions.

[8] Dutch unemployment rises sharply since 2012. This increase is mainly due to a growing number of firm bankruptcies.
[9] See, for example, Addison and Teixera (2003), Belot *et al.* (2007), and Freeman (2007).

The public employment service

The Labor Inspectorate is an institution that was introduced in the Netherlands when on June 11th, 1940 the German occupying forces enacted the First Enforcement Resolution ('*Eerste Uitvaardigingsbesluit*'). This resolution was meant to regulate labor market fluctuations and recorded a unilateral dismissal prohibition, imposing that an employer could not dismiss an employee without the approval of the Labor Inspectorate. A reasonable cause was required to obtain dismissal approval. The inspectorate checked the reasonability of the request. If a proposition for dismissal was judged unreasonable, permission to terminate the employment contract was not given.

After the war the Dutch government upheld this resolution by the declaration of the Extraordinary Resolution Labor Relations of October 5th, 1945 (*Buitengewoon Besluit Arbeidsverhoudingen 1945*). The goal of the declaration was "*to sustain and increase employment and to encourage production and productivity in order to stimulate the post WWII economic recovery*" in the Netherlands. The public employment service, or PES, replaced the Labor Inspectorate and was made responsible for observing the implementation and execution of the 1945 resolution by order of the government.[10] Notwithstanding fierce political debate, the resolution is still in force today with the PES being responsible for implementation, organization, and control of its objectives.

3. A simple equilibrium search model

In competitive labor markets government mandated severance payments are transfers that can be offset by optimal contracts between the worker and the firm (Lazear (1990), Acemoglu and Shimer (1999)). Concerns about everlasting job shortage in modern labor markets challenged the equilibrium market hypothesis and induced the development of theories of labor market

[10] See also Chapter 7 of S.S.M.Peeters (2006), *Verdund Sociaal Recht*. Monografieën Sociaal Recht 38, Wolters-Kluwer.

rigidities (Akerlof and Yellen (1985), Bentolila and Bertola (1990), Nickell (1997)). But when firing costs can be considered as pure taxations to the employer that are paid out to the worker as severance pay, they cancel out in wage bargaining. Compared to an equilibrium without employment protection, in a model with perfectly elastic labor demand severance pay does not reduce the employment level (Pissarides (2001)).

But in periods of contraction matching frictions, as in Mortensen and Pissarides (1994), are relatively unimportant. In recessions labor supply is in excess. Job shortage can occur in equilibrium nevertheless. It results from a combination of wage rigidity (Bewley (1999)) and a production technology of the firm that is characterized by diminishing marginal returns to labor (Michaillat (2012)). Decreasing returns change the curvature of labor demand such that marginal productivity of labor decreases when the employment level goes up. In equilibrium this results in an adjustment of the unemployment/vacancy ratio that differs fundamentally from equilibrium search models with perfectly elastic labor demand[11]. These assumptions form the point of departure of the theoretical model that we use to investigate the efficacy of a severance pay exemption to lessen job shortage in times of economic recession.

Consider an economy with one sector and one input, labor. Let L be the labor force, that is homogeneous; N is the number of workers with a job; U is the number of unemployed workers; and V is the total number of vacancies. Jobs end exogenously at rate λ. The employment rate is $n \equiv N/L$ and the unemployment rate is $u \equiv U/L$, such that $n+u=1$. The vacancy rate is $v \equiv V/L$; labor market tightness is $\theta \equiv v/u$. A recession coincides with θ being low. As in Pissarides (2000) the matching function $m(u;v)$ is homogeneous of degree one, and increasing and concave in u and v. The probability that a firm fills a vacancy is $m(u,v)/v = m(\theta^{-1};1) \equiv q(\theta)$, which is decreasing in θ. The probability that an unemployed worker finds a job is $m(u,v)/u = m(1;\theta) = \theta\, m(\theta^{-1};1) = \theta q(\theta)$, which is concave and increasing in θ.

[11] Crépon *et al.* (2013)) use a model with diminishing returns to labor to investigate the effects of a labor market policy for job seekers that shifts the labor supply curve outwards.

The labor supply curve

The inflow into unemployment is $(L\text{-}U)\lambda$. The outflow out of unemployment is $U\theta q(\theta)$. In steady state it holds that

(3.1) $$(L\text{-}U)\lambda = U\theta q(\theta) .$$

Equation (3.1) defines the Beveridge curve

(3.2) $$u = \frac{\lambda}{\lambda+\theta q(\theta)} .$$

It can also be rewritten as the labor supply curve

(3.3) $$n_S = \frac{\theta q(\theta)}{\lambda+\theta q(\theta)} ,$$

with $\frac{\partial n_S}{\partial \theta}>0$ and $\frac{\partial n_S}{\partial \lambda}<0$. When the mean duration of a job increases, the level of employment increases as well.

The labor demand curve

The firm's input decision is subject to a Cobb-Douglas production technology with decreasing returns to scale. The marginal revenue associated with a newly hired worker is $\alpha n^{\alpha-1}$, with $\alpha \in (0,1)$. Vacancies can be posted at costs *c*. Firms will post a vacancy when the expected returns are equal to the costs. In a labor market with search and matching and free entry the costs of posting a vacancy are equal to the expected returns. The Bellman equation for having a vacancy posted can be written as

(3.4) $$\Omega = \frac{c}{q(\theta)} ,$$

where Ω is the present value of filling a job opening. The Bellman equation for having a job filled is

(3.5) $$r\Omega = \alpha {n_D}^{\alpha-1} - w - \lambda\Omega \,,$$

with r being the interest rate and w is the total costs of a filled job. Both are fixed. Labor demand, n_D, can be derived from substitution of equation (3.4) into (3.5), such that n_D is a non-linear function of θ with $\frac{\partial n_D}{\partial \theta}<0$. The equilibrium values n^* and θ^* are obtained for $n_D = n_S$.

[INSERT FIGURE 2A ABOUT HERE]

Figure 2A demonstrates labor market equilibriums in times of prosperity (n_1^*) and in recessions (n_2^*). Given the properties of the probability that an unemployed worker finds a job -- $\theta q(\theta)$ being concave and increasing in θ -- it holds that in prosperous times (high θ) labor demand is high and the curvature of the labor supply curve is steeper than in recessions (low θ) when labor demand is low.

The government

In order to finance unemployment benefits the government imposes severance pay rate τ. Contrary to the UI literature we assume that the incidence thereof is entirely on the firm side. The total costs w to employ a worker exists of wage costs w_τ plus a severance pay mark-up τ

(3.6) $$w = (1+\tau)w_\tau.$$

The government receives $n\tau w_\tau$ and pays $u\beta w_\tau$ to unemployed workers. The severance pay rate τ is thus considered as pure taxation to the employer paid out to the unemployed worker as benefit rate β. In the steady state the budget constraint for the government requires that the unemployment-employment ratio is equal to the ratio of the severance rate and the benefit rate

(3.7) $$n\tau w_\tau = u\beta w_\tau \quad \Longrightarrow \quad \frac{u}{n} = \frac{\tau}{\beta}\,.$$

The government sets β and τ so as to accommodate the unemployment benefits for all unemployed workers. Substitution of $u = 1 - n$ yields

(3.8) $$\frac{1-n}{n} = \frac{\tau}{\beta} \quad \Longrightarrow \quad n = \frac{\beta}{\tau+\beta}.$$

Equation (3.8) shows that the employment rate is negatively correlated with the severance pay rate set by the government.

The employment effect of the severance pay exemption policy

Let $0 \leq p_\tau < 1$ be the probability that a firm in demise receives exemption of paying τ. In the first instance we assume p_τ is given. The total expected costs of filling a job changes into

(3.9) $$w' = p_\tau w_\tau + (1-p_\tau)(1+\tau)w_\tau = (1+\tau-\tau p_\tau)w_\tau.$$

As a result, due to a cut in the severance taxation to the firm the policy induces a reduction of the expected total operating costs of a filled job[12]. The Bellman equation for having a job filled becomes

(3.10) $$r\Omega = \alpha {n_D}^{\alpha-1} - w' - \lambda\Omega = \alpha {n_D}^{\alpha-1} - (1+\tau-\tau p_\tau)w_\tau - \lambda\Omega\,,$$

shifting the labor demand curve upwards.

[INSERT FIGURE 2B ABOUT HERE]

Figure 2B illustrates the effect of the severance exemption policy on the equilibrium employment. The solid lines represent the labor demand curves without the exemption policy, the dotted lines the labor demand curves with the policy in place. The graphs show that the policy is especially effective during recessions when labor market tightness θ is low. This result differs fundamentally from the standard equilibrium search framework. The difference

[12] A special case is when the firm would go bankrupt unless the government is willing to make a contribution to the firm to save jobs. Then τ becomes a subsidy rather than a cut in severance pay taxation. In fact this has been precisely the case when during the Great Recession the Dutch government helped saving private banks such as Fortis, Aegon, ABN-AMRO and ING with large financial injections, averting bankruptcies and preventing a big increase of the unemployment rate. A similar situation holds for the 2008 and 2009 government support to help saving the domestic U.S. auto industry.

is a consequence of the assumptions of wage rigidity during recessions and diminishing returns to labor. It renders permanent jobs being more receptive to cyclical fluctuations.

[INSERT FIGURE 3 ABOUT HERE]

Figure 3 shows cyclical fluctuations of permanent and temporary work in the Netherlands for the period 2001–2011. In this period there has been a shift of 140,000 workers or 2.6 percent of the workforce from the permanent to the temporary jobs. From 2005 to 2008 employment in both categories increased. The number of temporary jobs grew from 0.8 million in 2001 to 1.13 million in 2008. In 2009 it went down, but stayed above 1.1 million until 2011. The average number of permanent jobs is 5.25 million and fluctuates between 5.19 million and 5.33 million. In the years 2002 - 2005 and 2009 - 2011 as a result of the Great Recession permanent employment declined. Despite strict laws to reduce permanent job loss the number of tenured workers shows substantial cyclical fluctuation.

4. An empirical comparison of two different dismissal procedures

The most important difference for firms between permanent worker contract termination through the civil court or the public employment service is the possibility to be relieved from the obligation of severance pay in the latter case.

[INSERT FIGURE 4 ABOUT HERE]

Figure 4 shows all the requests for dismissals that have been submitted to the two institutions during the period 2001 through 2011. In the periods 2003 – 2004 and 2008 – 2009 at the onset of the Great Recession the number of dismissal requests to the public employment service increased relative to the number of requests to the civil court. These increases coincide with growing unemployment rates during the same periods. This finding is consistent with the theoretical result that when labor market tightness θ is low the policy is more effective and the number of dismissal requests increase. The volumes of requests to both institutions are

leading indicators for the unemployment rate. In recessions as well as during expansions firms are granted permission to dismiss workers and so avoid severance pay. This is consistent with the fact that job destruction -- as well as job creation -- occurs throughout the business cycle (Davis and Haltiwanger (1992)), though fewer firms decline in good times.

An electronic database allows the civil court to keep track of the number of dismissal cases filed each year. However, this database does not contain any detailed information on particular cases. All civil court files on individual dismissal cases are stored in archives administered by the organization of the courts. Detailed information is stored in paper folders only, each containing a written appeal, a written defense, and the judge's verdict. Each folder has a concise description of the reason for dismissal and some employee related characteristics such as job tenure, position, date of birth and earnings. Shortly after a case is closed the folder is moved to and stored in the local court's data archives where it is kept for a period longer than twenty-five years.

Each dismissal case filed at the public employment service is recorded in the Automation of Reports and Consolidated Orders System (ARCOS) database.[13] ARCOS files a small number of employer and employee related characteristics, such as the reason for dismissal and the duration of the dismissal procedure. Further specific information about each case -- including the wage of the employee, age, the number of years of tenure, and the number of working hours per week -- is kept in hard-copy files only that are stored in a national archive located in the city of Almere.

[INSERT TABLE 1 ABOUT HERE]

The data that we have collected for this study consists of a randomly selected and representative sample of 2,407 individual dismissal requests from the years 2006 to 2009 of which 1,140 are civil court cases and 1,267 are cases from the public employment service.

[13] Other databases that contain information of job dismissals through the public employment service, for example at the Central Bureau of Statistics in the Netherlands, are admittedly incomplete (*cf.* CBS (2011)).

Table 1 shows the numbers and percentages of requests divided by employment sector, firm size and gender.[14] The distribution over the various sectors does not differ in great detail between the civil court and the PES. The data show no significant gender difference. We do find differences with respect to firm size. Larger firms tend go to court more often. Why small firms are more likely to submit dismissal requests to the PES than large firms in not known. But the fact that large firms go to court more often is in line with the outcomes of related research for small and large firms in other European countries (*cf.* Bender *et al.* (2002) for Germany and France; Boeri and Jimeno (2005) for Italy).

[INSERT TABLE 2 ABOUT HERE]

Table 2 presents information on the differences in duration of the dismissal procedures and some other summary statistics of job characteristics. The duration of the civil court procedure is almost three weeks shorter than the PES procedure (20.3 days). However, the variance of court procedure duration is 2,644 days squared longer. This variation in duration is 2.5 times larger than the variance of the duration of PES procedures. Interestingly, there are practically no significant differences in tenure, age and hourly wage profiles between the two procedures.

Unexpected shocks to the employee-employer relationship

Table 3A gives an overview of the different reasons for which terminations of permanent contracts have been requested. These reasons form a direct link between the cause of a – negative – shock and the productive employer-employee relationship. Accordingly, we conclude that the uncertainty underlying the probabilities in our theoretical model can come from a variety of sources. Illnesses, disturbed employer-employee relationships, demand or technology shocks influence the equilibrium employment level all differently.

[INSERT TABLES 3A & 3B ABOUT HERE]

In the data files distinctions are being made between economic and non-economic reasons for dismissal requests. Table 3B reports rates of dismissal for economic and non-economic

[14] For detailed information about the data collection and its representativeness for the Netherlands, see Frenk (2013).

Reasons Important economic reasons are demonstrable structural declines in sales or the reduction in orders. The data include 1171 dismissal requests for economic reasons. Most dismissal requests submitted to the PES are economically motivated job reductions (71.3 percent). But a substantial amount of 22.8 percent of dismissal requests for economic reasons end up at the civil court. Non-economic reasons are divided into dysfunction, disturbed relationship, reproachable behavior, prolonged illness, and a rest category. Almost all cases of prolonged illness are approved by the public employment service. Most other cases are based on disputes between employers and employees.

5. Differences in firing costs

In this section we compute the firing costs differences between dismissals with permission from the public employment service and permanent job contract annulment by the civil court. To obtain a better understanding of the consequences of the severance pay exemption policy on idiosyncratic firing costs we estimate differences in cost distributions for all cases[15].

Firing costs and the civil court

Before starting a civil court procedure the employer is obliged to pay a court fee. The size of this fee depends on the legal form of the employer. The employer will also incur the costs of ongoing wage payments for the duration of the dismissal. This duration period can be divided into two components. The first component is the duration of the civil court procedure; or the time the court needs for a verdict. This starts at the moment a request is registered and lasts until the moment the court reaches a decision. The second component is the time between the verdict and the duration of employment contract termination, which is determined by court ruling. The civil court is not bound to observe the statutory notice period; and can decide when the employment contracted shall be dissolved. The final cost component is the

[15] See Pfann (2006) for an elaborate description on how to compute heterogeneous firing costs for individual workers in the Dutch labor market.

severance payment. In the Netherlands courts have a guideline to determine severance payments; a "*formula for cantonal judges*" states that severance payments should be equal to the product of three factors. A is a weighting factor of the years of age of the employee A= 0.5 for age<35 ; A=1 for 35≤age<45; A=1.5 for 45≤age<55, and A=2 for age≥55. Factor B is the gross monthly wage. C is a correction factor that is determined by the civil court, with 0≤C≤2. If C<1, the employee is held liable for negligence, and if C>1 the employer is held liable. In all other cases C=1. The exact amounts of severance payments are obtained directly from the court records.

Firing costs and the public employment service

An employer that submits a request for dismissal to the public employment service will incur ongoing wage costs during the time of the dismissal procedure. The period can be divided into three parts: the procedural time, the time to notice, and the period of notice. The procedural time is the time between submission and the pronouncement. The time to notice is the period between the pronouncement and the start of the notice period. The notice period is defined by the employee's years of tenure. Currently, a notice period equals 1 month for tenure less than 5 years, 2 months for tenure less than 10 years, 3 months for tenure less than 15 years, and 4 months for tenure of 15 years or longer.

[INSERT TABLE 4 ABOUT HERE]

Table 4 shows the outcomes of the computations of idiosyncratic firing costs based on our data set on individual dismissal cases. The *average* firing costs that a firm faces if a dismissal request is approved by the PES is € 7,480. That is 533 times the *average* hourly wage rate of a worker whose request for job destruction is submitted to the PES. The *average* firing costs a firm faces if a dismissal request is submitted to and approved by the civil court is € 30,982. That is 1,960 times the *average* hourly wage rate of a worker whose request for job destruction is submitted to the court. The *average* firing costs for the civil court procedure are found to be 4.14 times the average PES firing costs. The *median* costs are 1.83 times larger.

The most striking dissimilarity between the two procedures is the differences in *variances* of the firing costs. The standard deviation of the firing costs through the civil court is € 54,808; the standard deviation of firing costs associated with the public employment service is € 5,648. Consequently, the standard deviation of expected firing costs that result from civil court procedures is 9.7 times higher. Dismissal through court is characterized by higher costs and much larger variations in costs and duration.

Given these outcomes, the question arises: "Why do not all employers apply for dismissal permission from the public employment service always?" The reason is that the decisions can be challenged in court by the employer as well as by the employee; cases of troubled employer/employee relationships will not be dealt with by the public employment service. And if a request is considered unreasonable, permission to terminate the employment contract shall not be granted (but valuable time and costs are foregone). An unconditional estimate for the expected probability to receive approval of severance pay exemption for the period 2006-2009 can be obtained from Table 3B: $\hat{p}_\tau$ = .75[16]. Three out of four permanent contract jobs that are terminated for economic reasons receive approval from the PES. The fourth ends up in court.

[INSERT TABLE 5 ABOUT HERE]

In Table 5 we take a closer look into the differences in costs between economic and non-economic reasons. Firing costs for the public employment service are almost equal, while firing costs determined by the civil court is almost double the size for permanent job endings for economic reasons. Observable differences are in the wage rate, age, and tenure, as well as in the determination of the factor in the formula for cantonal judges that puts weight on who is held responsible most for the termination of a permanent worker's contract. The difference in average age between public service and civil court dismissals for economic reasons equals 4

[16] $\hat{p}_\tau$ = [904/1267] / [(267/1140)+(904/1267)] = 0.75

months. The tenure difference is 2 months. Both differences are not significant. Public service dismissals for non-economic reasons include primarily those workers whose permanent contracts are being dissolved due to long-term illnesses. Surprisingly, their average age is 4.5 years lower than that of workers that are laid off on non-economic grounds (disputes) by civil courts, but their tenure is 22.3 months longer.

6. Endogeneity of p_τ

One of the formal tasks assigned to the public employment service is to assess whether or not a request for permission to dissolve a permanent worker contract is based on reasonable grounds. This provision is one the most important disciplinary instruments currently available for the Dutch labor market policy. Preventive dismissal checks restrain firms to seek reduction of severance payments on unjustifiable grounds, while courts can discipline a firm for negligent behavior that leads to dissolution of a contract. Dutch firms are thus discouraged to shift private costs to society for considerations of self-interest alone.

Dismissal requests that are based on unjustifiable grounds correspond to the incidence of employer moral hazard. The probability that a firm can be exempted of severance pay is indeed subject to employer moral hazard. The moral dilemma is the following. Suppose that a firm wants to get rid of a worker for reasons not justified by the public employment service. Reaching a mutual agreement between the employer and the employee is not an option in this case. The firm knows that a request to the court is likely to be either rejected -- and the opportunity to fire this worker will be foregone -- or be granted by the civil court at high costs. When the firm is hit by a negative shock, this creates an alternative possibility to lay off this worker at low costs for the firm (but at high costs for society). The firm can submit a request to the public employment service for permission to fire these workers, and at the same time will not be losing the option to go to court. The firm will profit when a judgment of the

public employment service is in favor of the dismissal of this worker. The expected gains to such a firm will be higher during bad times.

More formally, suppose that a firm is characterized by δ being drawn from the distribution of propensities to request permission for dismissal based on justifiable reasons. When δ is low the firm is more likely to submit a request that is unjustified. The probability of exemption becomes $p_\tau(\delta)$ for some twice differentiable function p_τ, with $p_\tau' > 0$ and $p_\tau'' < 0$. The Bellman equation then becomes

$$r\Omega = \alpha {n_D}^{\alpha-1} - \big(1 + \tau - \tau p_\tau(\delta)\big) w_\tau - \lambda\Omega \tag{6.1}$$

with $\frac{\partial n_D}{\partial \delta} > 0$.

The public employment service is expert in the identification of dismissal requests that are not based on justifiable grounds. In recessions the volume of dismissal requests will be higher. Under the null hypothesis of no employer moral hazard p_τ is exogenously determined by the PES, δ will be constant for all employers, and the rate of unjustified dismissal requests shall not vary over the business cycle. The alternative hypothesis, however, is that δ is not constant. This induces endogeneity of p_τ. A low-δ employer has a higher probability that a dismissal request will be rejected. In recessions more firms are hit by downward shocks. So, the number of dismissal requests directed to the civil courts and to the PES will increase both in recessions, but the increase of requests to the PES is higher. In Figure 3 we showed already that this is indeed the case. When p_τ is endogenous the rejection rate is expected to be higher during recessions. High-δ employers face higher $p_\tau(\delta)$ than low-δ employers. This implies that the labor demand curve is higher for high-δ employers. We could, for example, interpret Figure 4B in such a way that the solid curves correspond to the labor demand curves of a low-δ employer and the dashed curves to that of a high-δ employer. Then again we find that the severance pay exemption policy has a much larger impact on equilibrium employment in times of recessions.

When p_τ is endogenous to the employer, *for example* when employer moral hazard is prevalent in the labor market, the severance pay exemption policy has two effects that will both lead to a reduction of the inflow into unemployment: (*i*) labor demand shall be higher in times of recession; and (*ii*) as a result of the a priori reasonability checks lay-offs based on unjustifiable grounds shall be lower.

Thus in theory severance pay exemption is an effective policy that increases the equilibrium level of employment especially in times of recession even when p_τ is endogenous. Regrettably, we cannot formally distinguish between low-δ and high-δ employers in our data set. But, what we can do is to relate the unemployment rate to the rejection rate for all time periods our data cover.

[INSERT TABLE 6 ABOUT HERE]

Table 6 shows dismissal requests that are not granted by the PES for the period 2006-2009. In the first three years of that period the unemployment rate is declining, while in 2009 at the onset of the Great Recession the unemployment rate increases. The rejection rate by the public employment increases when unemployment rises. The increase is observed for dismissal requests for economic as well as for non-economic reasons. More requests are rejected during recessions, indicating indeed that p_τ is pro-cyclical.

Although employer moral hazard has not received much attention in the academic economics literature so far, LeRoy (2008) finds U.S. state courts create conditions for employer moral hazard in the arbitration of employment disputes. Therefore we believe that the role of employer moral hazard is an important new line of research in the field of job security measurements and their effects on the levels of employment and unemployment. Preventive dismissal checks restrain firms to seek reduction of severance payments on unjustifiable grounds. Firms are discouraged to shift private costs to society on considerations of self-

interest alone diminishing the effect of employer moral hazard in the labor market. The institutional system of preventive dismissal checks seems effective in reducing the costs – in terms of higher unemployment insurance benefits – imposed upon the Dutch society.

7. Conclusions

This study discusses the roles of job security provision and social insurance policies in times of economic recession. Exemption of severance pay for firms in demise is a pure cost reduction for the firm in need that is paid for by the government and it is an example of flexible counter-cyclical labor market policy. This paper studies the effects of that policy in comparison with a common situation of a civil court procedure to check the reasonability of a dismissal. An equilibrium search model with wage rigidity and diminishing returns to scale predicts that the severance pay exemption policy slows down the increasing rate of unemployment during economic downturns. An empirical analysis of the differences in duration and costs between two procedures to terminate a permanent worker's contract shows that:

i. The duration of civil court procedures is shorter on average (three weeks);

ii. The variance of civil court procedure durations is larger (2.5 times);

iii. Average firing costs from civil court procedures are higher (4.14 times); median firing costs are also higher (1.83 times);

iv. The standard deviation of firing costs of civil court procedures is higher (9.7 times).

Since the incidence of both procedures is about equal during periods of expansion, while during periods of contraction firms are more likely to lay-off tenured workers using the option to be exempted from severance payments, we conclude that a labor market with this dual system of flexible counter-cyclical labor market policy functions better in recessions.

The results presented in this paper leave ground for extension, specialization, and generalization. One suggestion for specialization is to obtain deeper understanding of the role of employer moral hazard in labor market fluctuations. Moreover, the model presented in this paper can be extended with exit and entry of firms to accommodate for increases in the number of firm bankruptcies in recessions that lead to rising unemployment often seen when government budgets for counter-cyclical labor market policies deplete due to unexpectedly long-lasting recessions.

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Figure 1:

Unemployment Rates of EU15 Countries through Time (1998 – 2011)

The unemployment rate is measured as all unemployed persons as a percentage of the labor force, based on the definition of the International Labour Office (ILO). Source: OECD StatExtracts; publication date OECD iLibrary: 11 July 2012.

Figure 2A:

Labor Supply and Labor Demand in Good Times and Bad Times

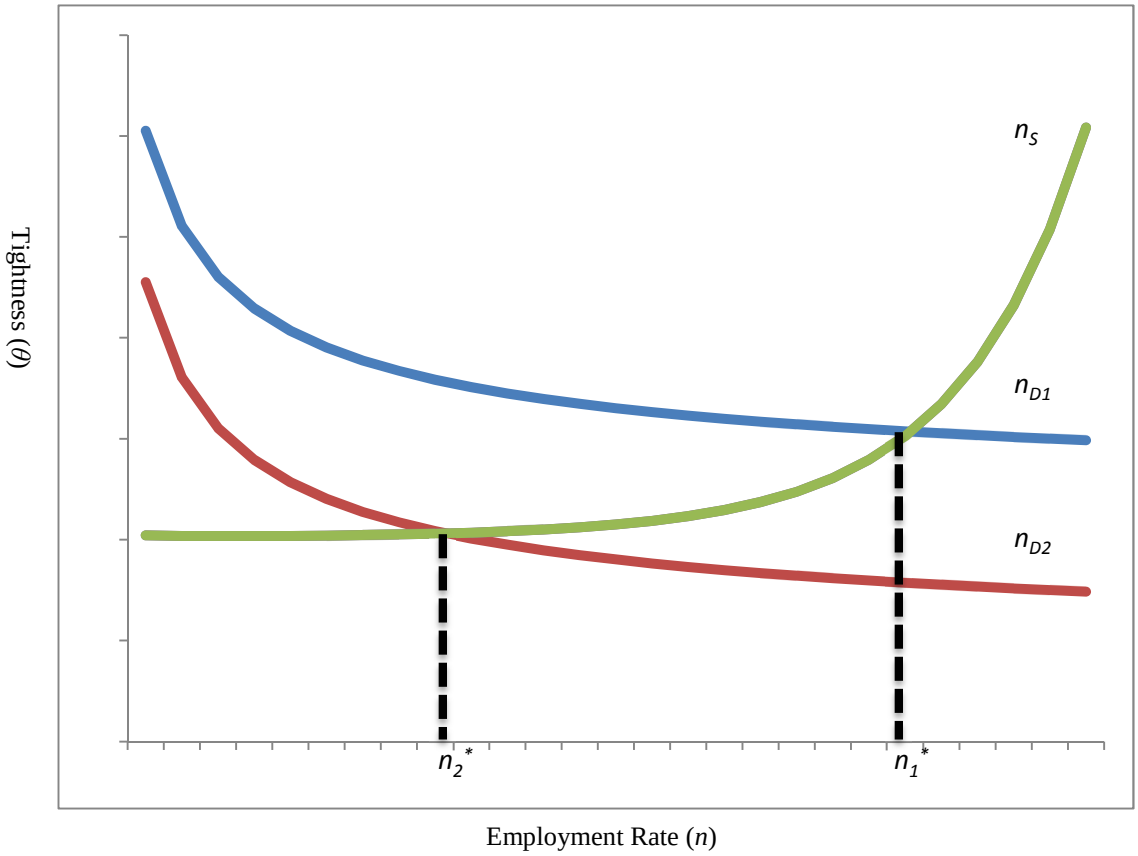

Figure 2A demonstrates labor market equilibriums in times of prosperity (n_1^*) and in recessions (n_2^*). Given the properties of the probability that an unemployed worker finds a job -- $\theta q(\theta)$ being concave and increasing in θ -- it holds that in prosperous times (high θ) labor demand is high and the curvature of the labor supply curve is steeper than in recessions (low θ) when labor demand is low.

Figure 2B:

The Employment Effects of Severance Pay Exemption in Good Times and Bad Times

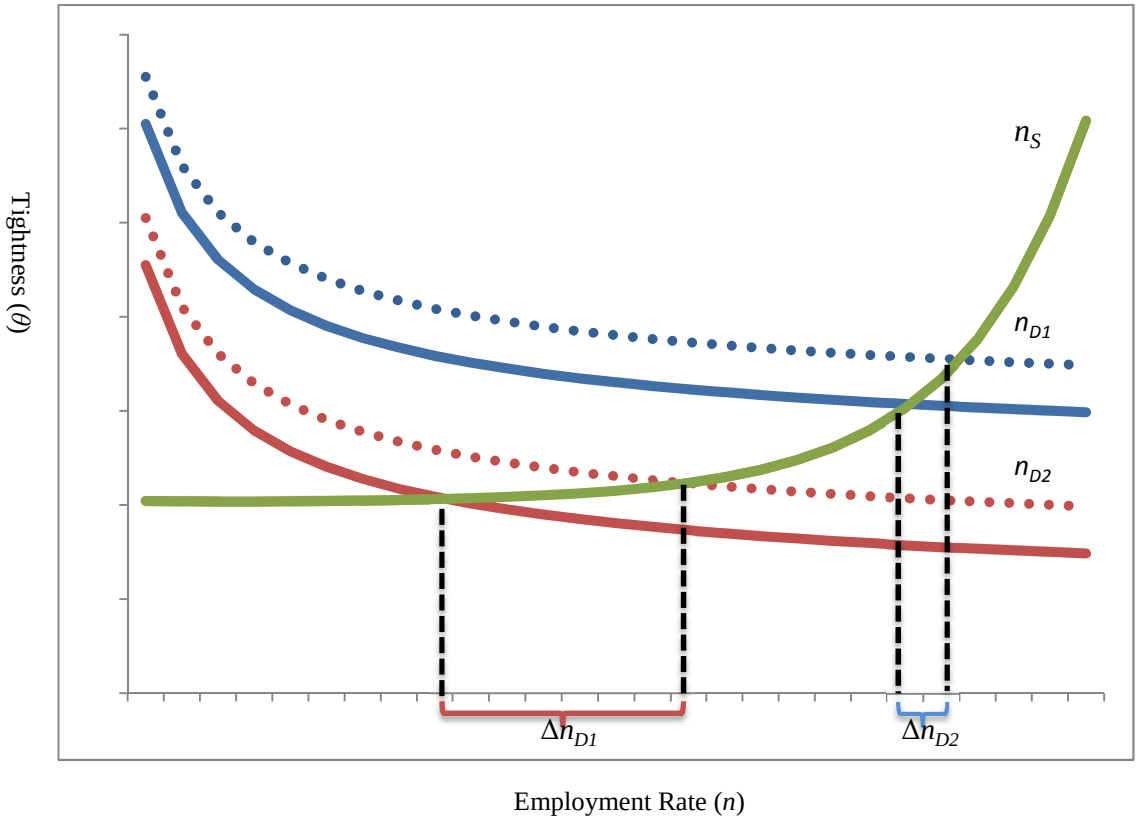

Figure 2B illustrates the effect of the severance exemption policy on the equilibrium employment. The solid lines represent the labor demand curves without the exemption policy, the dotted lines the labor demand curves with the policy in place. The graphs show that the policy is especially effective during recessions when labor market tightness θ is low, with $\Delta n_{D1} > \Delta n_{D2}$. This result differs fundamentally from the standard equilibrium search framework. It is driven by the assumptions of wage rigidity during recessions and diminishing returns to labor, and it renders permanent jobs being more receptive to cyclical fluctuations.

Figure 3:

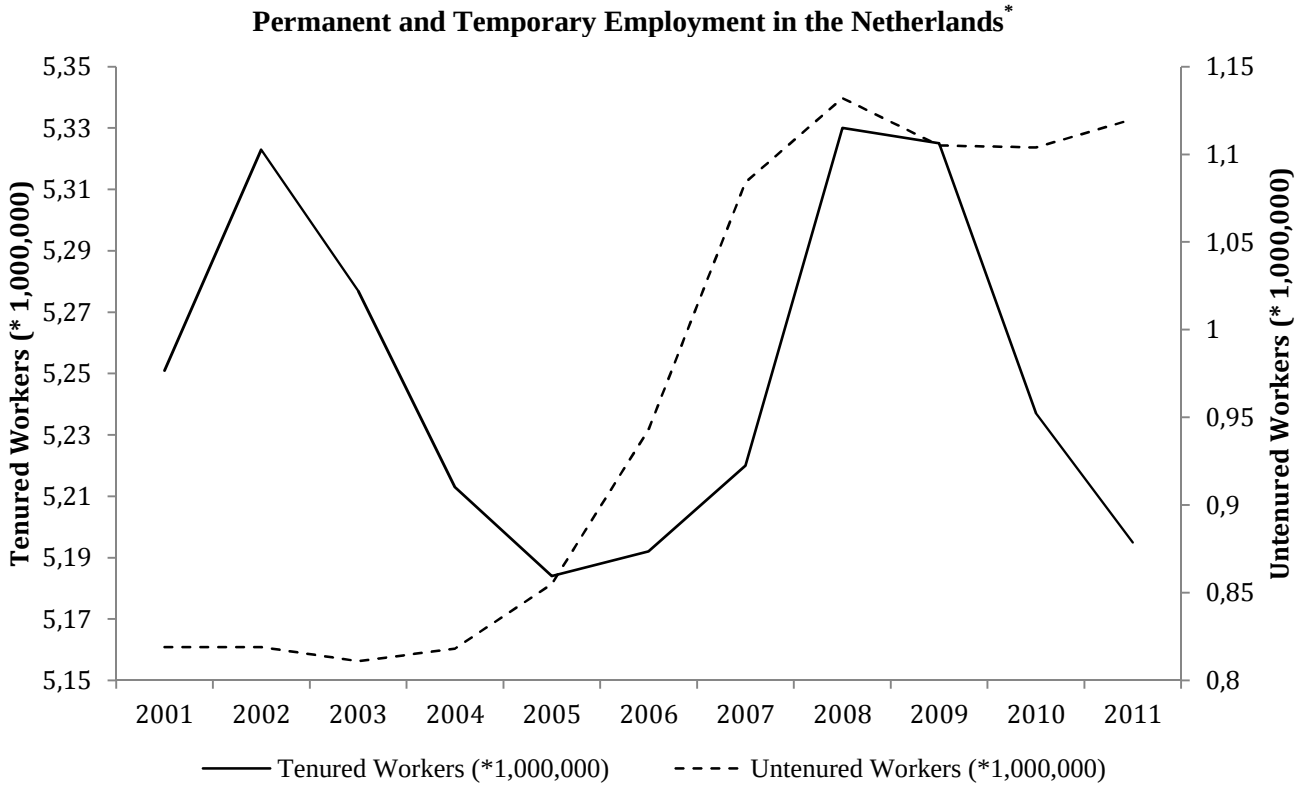

Figure 3 shows cyclical fluctuations of permanent and temporary work in the Netherlands for the period 2001–2011. In this period there has been a shift of 140,000 workers or 2.6 percent of the workforce from the permanent to the temporary jobs. From 2005 to 2008 employment in both categories increased. The number of temporary jobs grew from 0.8 million in 2001 to 1.13 million in 2008. In 2009 it went down, but stayed above 1.1 million until 2011. The average number of permanent jobs is 5.25 million and fluctuates between 5.19 million and 5.33 million. In the years 2002 - 2005 and 2009 - 2011 as a result of the Great Recession permanent employment declined. Despite strict laws to reduce permanent job loss the number of tenured workers shows substantial cyclical fluctuation.

*Source: Statistics Netherlands – Labour and Social Security Statistics.

Figure 4:

Duality in the Dutch Labor Market*

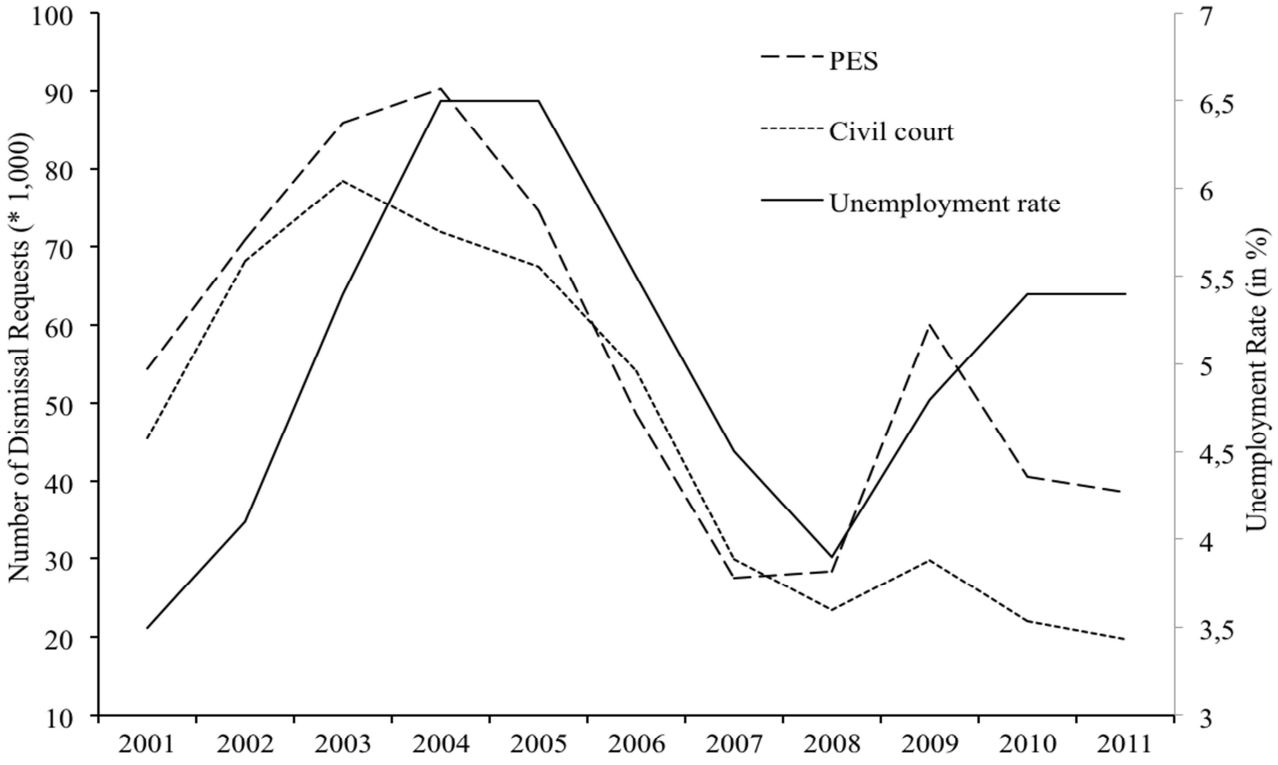

Figure 4 shows all the requests for dismissals that have been submitted to the two institutions during the period 2001 through 2011. In recessions as well as during expansions firms are granted permission to dismiss workers and so avoid severance pay. In the periods 2003 – 2004 and 2008 – 2009 at the onset of the Great Recession the number of dismissal requests to the public employment service increased relative to the number of requests to the civil court. These increases coincide with growing unemployment rates during the same periods. This finding is consistent with the theoretical result that when labor market tightness θ is low the policy is more effective and the number of dismissal requests increase. The volumes of requests to both institutions are leading indicators for the unemployment rate. * Source: Frenk (2013)

Table 1:

Dismissals through Civil Court or PES: Descriptives for the period 2006-2009*

	Civil Court		PES	
Sectors of Employment	**N**	**%**	**N**	**%**
Industry	284	*24,9*	362	*28,6*
Wholesale	157	*13,8*	287	*22,7*
Transport	121	*10,6*	79	*6,2*
Hotel and catering	30	*2,6*	34	*2,7*
Commercial services	207	*18,2*	170	*13,4*
Health and wellness	129	*11,3*	159	*12,5*
Culture and recreation	41	*3,6*	40	*3,2*
Construction	49	*4,3*	79	*6,2*
Other	119	*10,4*	47	*3,7*
Missing	3	*0,3*	10	*0,8*
Total	**1140**	***100,0***	**1267**	***100,0***
Firm size				
Less than 10	171	*15,0*	257	*20,3*
Between 10 and 100	304	*26,7*	731	*57,7*
More than 100	570	*50,0*	265	*20,9*
Missing	95	*8,3*	14	*1,1*
Total	**1140**	***100,0***	**1267**	***100,0***
Gender				
Male	717	*62,9*	751	*59,3*
Female	423	*37,1*	516	*40,7*
Total	**1140**	***100,0***	**1267**	***100,0***

Table 1 shows the numbers of requests per employment sector, firm size and gender. The distribution over the various sectors does not differ in great detail between the civil court and the PES. The data show no significant gender difference. There are differences with respect to firm size. Larger firms tend go to court more often. For further details about the methods of data collection, see Frenk (2013).

Table 2:

Summary Statistics of Dismissals for the Period 2006-2009 *

Civil Court 2006-2009	**Duration (in days)**	**Tenure (in months)**	**Age when employed**	**Hourly wage**
Mean	13,54	123,38	32,21	15,81
Median	3,00	78,00	30,72	13,46
Std. Deviation	51,42	121,17	9,69	7,75
Minimum	0,00	0,00	15,16	4,80
Maximum	1122,00	606,00	64,88	83,33

PES 2006-2009	**Duration (in days)**	**Tenure (in months)**	**Age when employed**	**Hourly wage**
Mean	33,88	127,66	33,82	14,04
Median	25,00	91,00	32,83	12,69
Std. Deviation	32,25	105,45	10,35	5,70
Minimum	0,00	1,00	15,59	3,58
Maximum	309,00	513,00	65,45	73,48

In Table 2 duration is the time in days that passes between the submission of a permanent contract termination request and the final ruling; tenure is the time that a worker is employed measured in months at the moment of request submission; age of a worker is measured in years at the moment of request submission; hourly wage is the contract wage per hour worked measured in 2009 euros at the time of request submission excluding bonuses, holiday payments, and other fees from employment.

Table 3A:

Reasons to Request the Termination of Permanent Contracts*

	PES		Civil Court	
Reasons for dismissal:	**N**	**%**	**N**	**%**
Economic reasons	904	*71,3*	267	*23,4*
Non-economic reasons:				
Dysfunctional	23	*1,8*	44	*3,9*
Disturbed relationship	14	*1,1*	788	*69,1*
Reproachable behavior	28	*2,2*	26	*2,3*
Prolonged illness	286	*22,6*	13	*1,1*
Other	12	*0,9*	2	*0,2*
Total	**1,267**	***100,0***	**1,140**	***100,0***

Table 3B:

Rates of Dismissal for Economic and Non-Economic Reasons*

	PES	Civil Court	Both
Economic reasons	***0.376***	***0.111***	***0.486***
	(904)	(267)	(1,171)
Non-economic reasons	***0.151***	***0.363***	***0.514***
	(363)	(873)	(1,236)
All	***0.526***	***0.474***	***1.000***
	(1,267)	(1,140)	(2,407)

Table 3A & 3B show results based on individual data for the period 2006-2009. Dysfunctional refers to abnormal behavior of a worker, behavior outside standard norms; disturbed relationship characterizes a breakdown of a normal or beneficial relationship between the employer and the employee; reproachable behavior refers to worker's conduct that incurs disgrace, discredit, or blame upon the firm; prolonged illness refers to registered long-term disease with reduced cure chances. The most important economic reasons are: structural declines in sales, and reductions in the order portfolio.

Table 4:

Differences in Firing Costs Distributions Between Outcomes of the Dismissal Procedures Of the Civil Court and the Public Employment Service

PES	Wage costs duration of process	Wage costs time to notice	Wage costs period of notice	Total average firing costs
Mean	€ 2,964	€ 787	€ 3,728	**€ 7,480**
Median	€ 2,347	€ 583	€ 2,458	**€ 6,054**
Std. Dev.	€ 3.098	€ 685	€ 3,102	**€ 5,648**
Minimum	€ 0	€ 9	€ 92	**€ 171**
Maximum	€ 32,651	€ 3,948	€ 25,685	**€ 61,714**

Civil Court	Court fee	Wage costs duration of process	Wage costs during time to contract termination	Severance payment	Total average firing costs
Mean	€ 102	€ 765	€ 3,496	€ 26,619	**€ 30,982**
Median	€ 104	€ 216	€ 2,213	€ 10,159	**€ 13,708**
Std. Dev.	€ 7	€ 1,791	€ 4,315	€ 52,370	**€ 54,808**
Minimum	€ 67	€ 0	€ 0	€ 0	**€ 97**
Maximum	€ 118	€ 17,033	€ 37,730	€ 664,174	**€ 683,947**

Table 4 shows the composition of firing costs during the lay-off procedure. The duration time can be divided into the procedural time, the time to notice, and the period of notice. The procedural time is the time between submission and the pronouncement. The time to notice is the period between the pronouncement and the start of the notice period. The notice period is defined by the employee's years of tenure. A notice period equals 1 month for tenure less than 5 years, 2 months for tenure less than 10 years, 3 months for tenure less than 15 years, and 4 months for tenure of 15 years or longer.

Table 5:
Differences in Firing Costs Divided by Reason of Dismissal

	1.Procedural costs	*2. Wage costs during the process of dismissal*			*3.Severance pay*	*4.Total average costs*
PES	No procedural costs	Duration of PES procedure	Time to notice	Period of notice	No severance pay	**PES average dismissal costs**
Civil court	Court fee	Duration of civil court procedure	Time to termination of the employment relationship		Severance pay	**Civil court average dismissal costs**

NON-ECONOMIC REASONS

	1.Procedural costs	*2. Wage costs during the process of dismissal*			*3.Severance pay*	*4.Total average costs*
PES	€ 0	€ 3,437	€ 866	€ 3,037	€ 0	**€ 7,339**
Civil court	€ 102	€ 740	€ 3,357		€ 22,718	**€ 26,918**

ECONOMIC REASONS

	1.Procedural costs	*2. Wage costs during the process of dismissal*			*3.Severance pay*	*4.Total average costs*
PES	€ 0	€ 2,786	€ 758	€ 3,988	€ 0	**€ 7,532**
Civil court	€ 104	€ 839	€ 3,905		€ 38,146	**€ 42,994**

Table 5 divides firing costs compositions between economic and non-economic reasons. Firing costs for the public employment service are almost equal, while firing costs determined by the civil court is almost double the size for permanent job endings for economic reasons. Differences are determined by differences in wage rate, age, and tenure, as well as by the determination of the factor in the formula for cantonal judges that puts weight on who is held responsible most for the termination of a permanent worker's contract.

Table 6:
Dismissal Requests Not Granted by the Public Employment Service over Time

Year	Percentage of Requests Not Granted	Percentage of Requests Not Granted (Economic)	Percentage of Requests Not Granted (Non-Economic)	Change in Unemployment Rate
2006	4.4	2.9	7.9	**-1.0**
2007	4.2	2.0	8.0	**-1.0**
2008	4.2	2.7	6.6	**-0.6**
2009	6.0	4.6	11.0	**+0.9**

Table 6 shows dismissal requests that are not granted by the PES for the period 2006-2009. In the first three years of that period the unemployment rate is declining, while in 2009 at the onset of the Great Recession the unemployment rate increases. The rejection rate by the public employment increases when unemployment rises. The increase is observed for dismissal requests for economic as well as for non-economic reasons. More requests are rejected during recessions, indicating indeed that the probability to obtain exemption of severance pay is pro-cyclical.