



# Royal Netherlands Academy of Arts and Sciences (KNAW) KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN

## Ageing and employers' perceptions of labour costs and productivity: a survey among European employers

Conen, W.S.; van Dalen, H.P.; Henkens, C.J.I.M.

2012

### **document version**

Publisher's PDF, also known as Version of record

[Link to publication in KNAW Research Portal](#)

### **citation for published version (APA)**

Conen, W. S., van Dalen, H. P., & Henkens, C. J. I. M. (2012). *Ageing and employers' perceptions of labour costs and productivity: a survey among European employers*. (Netspar Discussion papers). Network for Studies on Pensions, Aging and Retirement (NETSPAR).

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*Wieteke Conen, Hendrik van Dalen and Kène  
Henkens*

**Ageing and Employers'  
Perceptions of Labour Costs and  
Productivity**

A Survey Among European Employers

**Ageing and Employers' Perceptions of Labour Costs and Productivity: A Survey  
Among European Employers**

Wieteke S. Conen<sup>1</sup>, Hendrik P. van Dalen<sup>2</sup> and Kène Henkens<sup>3</sup>

version February 17, 2012

<sup>1</sup> Department of Law, Economics and Governance, Utrecht University, The Netherlands and Netherlands Interdisciplinary Demographic Institute (NIDI)

<sup>2</sup> Netherlands Interdisciplinary Demographic Institute (NIDI), The Hague, The Netherlands and Tilburg University, Tilburg School of Economics and Management

<sup>3</sup> Netherlands Interdisciplinary Demographic Institute (NIDI), The Hague, The Netherlands and Tilburg University, Faculty of Social and Behavioural Sciences.

## **ABSTRACT**

**Purpose:** This paper examines employers' perceptions of changes of the labour cost-productivity gap due to the ageing of the workforce, the effects of tenure wages and employment protection on the perceived gap and whether a perceived labour cost-productivity gap affects employers' recruitment and retention behaviour towards older workers.

**Methodology:** We analyze surveys administered to employers in Denmark, France, Germany, Italy, the Netherlands, Poland and Sweden.

**Findings:** Approximately half of the employers associate the ageing of the personnel staff with a growing gap between labour costs and productivity. Both the presence of tenure wages and employment protection rules increase the probability that employers perceive a widening labour cost-productivity gap due to the ageing of their workforce. A counterfactual shows that even when employment protection and tenure wage systems are abolished 40 percent of the employers expect a net cost increase. The expected labour cost-productivity gap negatively affects both recruitment and retention of older workers.

**Originality:** The wage-productivity gap is examined by the perceptions of employers using an international comparative survey.

**KEYWORDS** *Older workers, labour costs, labour productivity, ageing, employers, tenure, seniority wages, retirement*

## 1. Introduction

Employers play a key role in older worker's labour mobility and possibilities for older workers to retain their jobs. Barriers for employers to hire or retain older workers are often attributed to an increasing wage-productivity gap. For instance, the OECD (2006) states "To the extent that labour costs of older workers rise faster than their productivity, employers may be reluctant to either retain workers beyond a certain age or hire older workers" (p.67). In this paper we examine the perceived consequences of an ageing work staff on labour costs and productivity, and whether such perceptions are related to employers' behaviour towards older workers.

Various methods have been used to examine the relationship between age, wage and productivity. Many studies use matched worker-firm datasets linking age-earnings profiles to plant-level production functions based on either cross-sectional information (e.g. Hellerstein and Neumark, 2004) or panel data (cf. Crépon *et al.*, 2002; Van Ours and Stoeldraijer, 2011).

Empirical evidence on the relationship between age, wage and productivity is inconclusive. Some studies find worker's wage-productivity gap to increase with age (Kotlikoff and Gokhale, 1992; Flabbi and Ichino, 2001; Crépon *et al.*, 2002; Hellerstein and Neumark, 2004; Ilmakunnas and Maliranta, 2005), while others find little evidence of an age-related wage-productivity gap (Aubert and Crépon, 2007; Van Ours and Stoeldraijer, 2011). The cited papers predominantly try to establish a relationship between the age structure of the work force and 'objective' measures of labour productivity and costs.

In this paper we approach the wage-productivity gap from a different perspective by examining the perceptions of employers using a survey. The central research questions of this paper are the following: (1) what are the determinants of the perceived changes in the labour cost-productivity gap due to the ageing of the workforce?; and (2) to what extent does this perceived gap affect employers' recruitment and retention of older workers?

In answering our first research question we focus on two factors which are assumed to hamper or stifle flexibility on the labour market: tenure wages and employment protection. Tenure wages are wages that rise with tenure, apart from the employee's formal qualification and performance within the organisation. Organisations with a steep tenure-wage profile are more likely to be confronted with a labour-cost productivity gap in the face of an ageing personnel structure. In our study, employment protection refers to the perceived difficulty of firing a worker with a permanent contract. Employment protection regulation has been at the centre of heated policy debate in Europe (Siebert, 1997; Blanchard, 2005). The central issue in offering employment protection is to strike a balance between the interests of the employer - flexibility for organisations- and those of the employees: employment security. From the employers' perspective, employment protection may hold both costs and benefits for employers. With respect to costs, employment protection for instance can diminish the ability to cope with a (rapidly) changing environment. Furthermore, employment protection may strengthen "insiders" wage bargaining positions (OECD, 2004; Addison and Teixeira, 2003). But protection may also have benefits to both employers and employees: long-term contracts create an environment which may enhance productivity by encouraging human capital accumulation (cf. Belot *et al.*, 2002). Whether employment protection regulation is a boon or a bane remains an unresolved issue. This paper addresses the question whether organisations experiencing high levels of employment protection have different expectations regarding a labour cost-productivity gap than those organisations facing low levels of employment protection.

Our second research question focuses on whether a perceived gap between labour costs and productivity affects employers' recruitment and retention behaviour towards older workers. Whereas there is no general consensus about the relationship between age, wage and productivity, the evidence seems to be unambiguous with respect to the vulnerability of older

workers in the labour market. Early retirement tends to be a one-way street and older workers' opportunities to re-enter the labour force after a period of unemployment or to change jobs at the end of a working life are limited and largely determined by employers (OECD, 2006; Berger, 2009). It is suggested that negative perceptions about labour costs and productivity of older workers are critical barriers to employment prospects of older workers (OECD, 2006).

We collected data among European employers and asked their attitudes towards older workers and retention and hiring behaviour of older workers. The cross-national dimension provides information on whether employers' perceptions are either determined within a national framework, or whether perceptions are more generally found among European employers. The data come from surveys carried out in Denmark, France, Germany, Italy, Netherlands, Poland and Sweden in the year 2009. Employers from the various countries face different labour market situations and institutional arrangements affecting both supply of and demand for older workers. By pooling these diverse experiences one is able to get more robust and clearer views of how ageing and labour market institutions affect employers' views and behaviour.

The next section addresses the theoretical background of the relationship between ageing, labour costs and productivity. Section 3 presents the data and variables of interest. The results are presented in Section 4 and in Section 5 we conclude with a summary of our main findings and discussion.

## **2. Ageing, labour costs and productivity**

Several strands of economic theory provide a basis for hypotheses in examining the relationship between age, labour costs and labour productivity. The first strand is the spot market theory which states that in a perfectly competitive labour market firms pay workers according to their marginal product, no matter the age of the worker. In spot market theory an

age-related wage-productivity gap would not occur by definition. As productivity is often difficult or costly to assess, in most organisations it is not a viable option for employers to pay workers according to their marginal productivity.

The second strand of economic theory comes from human capital theory (Becker, 1962; for an overview, see Polachek and Siebert, 1993). The theory states that investments in human capital boost labour productivity and productivity is positively related to remuneration of employees. In principle, people accumulate human capital by training and experience during the whole of their career, but most investments in training take place at younger ages. Human capital also may depreciate, e.g. because knowledge of older technologies becomes obsolete or because cognitive and physical skills deteriorate. Depreciation of human capital will lead to a decrease in productivity.

During the late 1970s, the relationship between age, labour costs and productivity as described by human capital theory was called into question (Hutchens, 1989) which gave rise to different kinds of contract theories, such as Lazear's delayed payment contract theory (1979). This theory states that employers may have implicit contracts with their employees regarding the relationship between productivity and income over their career: while earnings are lower than productivity during the first phase of workers' careers, earnings are higher than productivity during the second phase. Such contracts induce employees to perform at a higher level of effort and reduce workers incentives to shirk. A different type of contract theory, such as by Harris and Holmstrom (1982), takes into account the uncertainty about productivity of newly recruited workers, which translates into offering relatively low wages to new workers. Another variation on the theme takes into account worker reliability. Since younger workers – by definition – cannot have a reputation for reliability, younger workers pay a higher wage premium and effectively thus receive lower wage offers (Grossman, 1977). All of the above contract theories imply a present value relationship between compensation and productivity



and - according to these contract theories - this boils down to a distribution in which at young ages productivity exceeds wages and at older ages wages exceed productivity.

As Lazear (1979) argues, incentive theories are consistent with mandatory retirement. He stresses that “A necessary consequence of this payment schedule is mandatory retirement, that is, a date at which the contract is terminated and the worker is no longer entitled to receive a wage greater than his VMP [value of the worker's marginal product]” (Lazear, 1979, p. 1283). Therefore, employers will either opt for mandatory retirement schedules or the use of private pension schemes which penalize continued employment beyond a certain age. An additional complication with contract models, in which at higher ages remuneration is relatively high, is that the sustainability of the contracts is negatively affected by the ageing of the workforce. An increase in the number of older – relatively high paid - workers reduces the financial sustainability of the organisation and increases incentives for organisations to either decrease wages of older workers, renegotiate the promise to retain the worker till the mandatory retirement age, or lay them off.

An element that might affect the decisions of employers is the level of employment protection. Strong employment protection rules may weaken the adaptability of organisations to alleviate the possible negative consequences of an ageing workforce. Contrary to a host of macroeconomic research which focuses on the de jure level of employment protection as measured by the OECD, this study uses the level of employment protection as perceived by individual employers. There is some evidence why perceptions of regulations may be of importance in understanding actual decisions. For instance, Boeri and Jimeno (2005) show that small firms are often exempted from certain aspects of labour regulations or, when enforcement is weak, firms do not comply. In general, one would expect that de jure regulations impact labour demand and research by Pierre and Scarpetta (2006) who employ the World Bank’s Investment Climate Survey show that firms in developing countries facing

stricter employment legislation are more likely to report that regulations are a major obstacle to their operation. However, they also show that larger firms and innovating firms tend to be more sensitive to the strictness of regulation. In short, it matters to pay special attention to the individual circumstances in which firms operate and under those circumstances perceptions of the strictness of regulations may even offer a better approximation of the way rules and regulations function in a country. Employers face uncertainty about future developments in labour costs and productivity of an individual employee and this uncertainty plays a large role in hiring decisions. Although diplomas, a job interview and references may provide an idea of the abilities of new personnel, it remains to be seen how productive they will be. Employers have access to what Phelps (1972) called “previous statistical experience”: information on how certain categories or groups of employees tend to behave and develop. This experience affects their hiring decision and as Thurow (1975) has formalized it this experience determines to a large extent the place of job candidates in the job queue. The “job queue” represents the idea of employers—who are in the process of recruitment and selection—ranking potential employees and placing them in a fictitious order of preference. Employers select the candidates in turn, until their demand for labour has been met. If employers associate seniority with a larger labour cost-productivity gap, this will presumably negatively affect the relative position of older workers in this “job queue”.

This short overview of the theory on the relationship between age, labour costs and productivity can be formalized in three specific hypotheses which will be the focus of this paper:

- *Tenure wage hypothesis: Organisations that apply tenure based wage profiles are more likely to expect an increasing labour cost-productivity gap due to ageing of the workforce than organisations without such seniority wage rules.*

- *Employment protection hypothesis: Employers who perceive the level of employment protection to be high are more likely to perceive a larger labour cost – productivity gap due to an ageing of the workforce than those employers who perceive this level of protection to be low.*
- *Recruitment and retention hypothesis: The perception of a larger labour cost-productivity gap negatively influences employers' retention and hiring behaviour towards older workers.*

### **3. Methodology**

#### ***Survey among employers***

Data on employers' behaviour and attitudes were collected between March and November 2009. The countries included in this study are geographically dispersed over Europe and cover all types of European welfare state regimes. Sweden and Denmark represent Esping-Andersen's (1990) social-democratic welfare state, the United Kingdom stands for the liberal welfare state, and the Netherlands, Germany and France stand for the continental/conservative welfare state. As several authors (Leibfried, 1992; Ferrera, 1996; Bonoli, 1997) also distinguish a fourth category, the Mediterranean type of welfare state, we also included Italy. Finally, Poland represents a 'new' - former Eastern-European - EU-member State. In our paper, we used data from comparative surveys carried out among employers in Denmark, France, Germany, Italy, the Netherlands, Poland and Sweden.<sup>1</sup>

The total number of completed questionnaires amounts to 5,822, of which 609 are from Denmark, 500 from France, 892 from Germany, 770 from Italy, 1,077 from the Netherlands, 1,037 from Poland and 525 from Sweden. The overall response rate was 23%

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<sup>1</sup> Data from the United Kingdom was left out, because the United Kingdom used a shorter questionnaire which did not cover the questions on seniority wage and recruitment and retention behaviour; some of the main themes in this paper.

and ranged from 7 to 53% for the different countries. This is lower than the average response rate for individual surveys but in line with the rate generally found in corporate surveys. In Europe and the United States, response rates have been found to be 20 to 30% at most (see Brewster *et al.*, 1994; Kalleberg *et al.*, 1996; Van Dalen *et al.*, 2009).

The questionnaires were completed by directors/ CEOs/ CFOs (29 percent), head of departments and general managers (16 percent) and human resource managers (33 percent); this 'higher management' sums up to at least 79% and this group of management is likely to be well informed and has good insight in the policies and practices of the organisation. 61 percent of respondents reported an academic degree was required for their job. The average age of respondents is 46 years and 50 percent of respondents are male.

The questionnaires used in the different countries were identical. Interview techniques used differed between countries, depending on what was perceived to be the best way to address respondents in the country. Denmark used computer-assisted web interviewing; Germany, the Netherlands and Sweden used paper and pencil interviewing; and France, Italy and Poland used computer-assisted telephonic interviewing.

In all countries we drew a stratified sample on the characteristics sector and size of the establishments. In the analyses on the *national* level we weighted the data afterwards to account for the sampling design; to ensure the observations are representative for the population of employers. Weights are constructed according to the population of establishments from national statistics bureaus and correct for sector and size of the establishment. To present results at the *pooled* level, we pooled the data for all eight countries – including the national weighting factors - and constructed a new weighting factor that takes the net sample size of the different countries into account. Otherwise, Dutch and Polish employers (N > 1000) would influence results more than French and Swedish employers (N≈500).

## *Measures*

### *Dependent variables*

Perceptions of a labour cost-productivity gap<sup>2</sup> were based on the following two questions. “What are the consequences in your organisation if the average age of your personnel increases by 5 years?” Response items include: (a) *labour costs* and (b) *labour productivity* (answering categories: “1” strong decline, “2” decline, “3” stays the same, “4” increase, “5” strong increase). The combination of the expectations on labour costs and productivity translate into expectations on the *development* of the labour cost-productivity gap with an ageing workforce. For instance, when an employer expects productivity to stay the same but labour costs to increase, this implies an *increase* of the labour cost-productivity gap. A scale of the expected labour cost-productivity gap was constructed by grouping together respondents who expect the gap to decrease (“-1”), stay the same (“0”) or to increase (“1”). In figure 1 the relevant scores are presented for the different combinations of changes in labour costs and productivity.

[Here Figure 1] – Relevant groups for the analysis of a labour costs productivity gap

Retention behaviour was operationalised by asking respondents whether they encouraged workers to continue working until they reach age 65 (“1” currently applied, “0” not applied). Recruitment behaviour was operationalised by asking whether employers recruited older workers (“1” currently applied, “0” not applied). “Older workers” were

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<sup>2</sup> Labour costs may consist of both direct wages and additional labour costs (such as extra leave or sickness absenteeism). Although ‘wages’ and ‘labour costs’ are not the same, in the economic literature it is more common to talk about a ‘wage-productivity gap’ than about a ‘labour cost-productivity gap’. Therefore, we use ‘wages’ and ‘labour costs’ interchangeably.

defined in the questionnaire as “workers ages 50 years and older.” Descriptive statistics of the variables used in the analyses are presented in table 1.

[Here Table 1] – Descriptive statistics

### *Independent variables*

*Tenure wage* – Tenure wage was measured by the question “To what extent, apart from the employee’s formal qualification and the function in the organisation, do wages rise with tenure (i.e the number of years that the employee has worked in your organisation)?” (answering categories: “1” not at all to “4” = high extent). Tenure wages are usually implemented by the use of salary scales which automatically increase by one step each year.

*Employment protection* – Employment protection legislation in general refers to the entire set of regulations affecting both hiring and firing policies. We focus on protection of permanent workers against (individual) dismissal, which is highly relevant regarding the adaptability of organisations to alleviate the possible negative consequences of an ageing workforce. This measure is based on the question: “How difficult is it in your organisation to fire a worker with a permanent contract?” (answering categories: “1” very easy to “5” very difficult). Our measure captures perceived employment protection at the organisational level rather than objective measures of legislation at the national level, as performed for instance by OECD.<sup>3</sup> This different stance towards employment protection is complementary in the sense that perceptions may differ between employers *within* a country: the perceived level of employment protection need not be grounded in law, but can also originate from collective

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<sup>3</sup> We note that the OECD (2010b) distinguishes three pillars of employment protection legislation – 1) protection of permanent workers against (individual) dismissal; 2) specific requirements for collective dismissal; 3) regulation on temporary forms of employments. Our questionnaire captures primarily the perception of the strictness of the first pillar. Therefore, in our study the effects of employment protection on the labour cost-productivity gap might be an underestimation as we did not include all aspects of employment protection.

bargaining of social partners, organisational culture and individual characteristics or experiences of employers.

*Control variables* – We controlled for sector of industry, organisational features and country in the analyses. To control for sector differences, respondents were given a list of industrial sectors defined by Eurostat (2002) and were asked to indicate the sector in which their own organisation operated. We categorized the sectors into “industries,” “construction,” “services and trade,” “public sector,” and “education, health and social work.” The control variables on organisational characteristics were assessed using five variables. Respondents were asked for the total number of employees in their organization (size), share of high-skilled workers, share of workers with fixed-term temporary contract and the share of older workers; all of these variables are continuous variables. The extent of absenteeism/ sickness rate was based on the question “To what extent does your establishment encounter any of the following problems related to personnel - High absenteeism and/or high sickness rate” (answering categories: “1”no/low extent to “3” high extent). Since the number of countries is too small to perform multilevel analyses to test for macro-level effects (cf. Maas and Hox, 2005), we controlled for country characteristics by including country dummies.

### ***Analyses***

We estimated ordered logistic regression models to estimate the impact of tenure wages, employment protection and control variables on the perceived labour cost-productivity gap. In these models, the outcome variable was treated as ordinal, as the response levels have a natural ranking (decline, no change, increase), despite our not knowing the actual distances between contiguous levels. Nonetheless, for the results of such models to be valid, they must meet the criteria for proportional odds. Since the ordered logit model estimates one equation

over all levels of the dependent variable (as compared to the multinomial logit model), the test for proportional odds tests whether our one-equation model is valid. We used a Chi-square test for proportional odds. The results suggest that the assumption of proportional odds was not violated. We therefore analyzed the data using ordered logistic regression analyses in which the values of our dependent variable are treated as ordinal variables.

To examine to what extent the perceived gap affects employers' recruitment and retention of older workers, we performed multivariate logistic regression.

## **4. Results**

### ***Perceptions of changes in labour cost-productivity gap***

We address the question whether organisations expect a change in the labour cost-productivity gap due to an ageing of workforce. Table 2 shows to what extent employers expect an ageing workforce to affect the labour costs and labour productivity within their organisation.

The first part of the table presents the expectations regarding the influence of ageing on labour costs. For the pooled sample we show that almost half of employers expect an increase in labour costs. There are, however, large differences between countries. In Poland and Denmark up to one-third of employers expects labour costs to increase. In Sweden, Germany, Italy and France roughly half of employers expect costs to increase. Employers in the Netherlands are at the other end of the spectrum: here 75 percent of employers think labour costs will increase due to an ageing workforce. Only very few employers expect a decline of labour costs. The latter finding is in accordance with insights from OECD (2006) based on cross-sectional macro data and Deelen (2011) who shows for a large administrative database that wage-tenure profiles in the Netherlands are steep.



With respect to the relationship between ageing and productivity the results show that in all countries a majority of employers state that productivity as such is not affected by the ageing of the workforce. However, a substantial minority (28 percent) expects productivity to decrease (strongly); this is the highest in Germany where 36 percent of the employers expects a productivity decline and lowest in Denmark (19 percent).

[Here Table 2] – Expected consequences

The combination of the expectations on labour costs and productivity translate into expectations on the development of the labour cost-productivity gap with an ageing workforce, which is shown in the third part of the table. We combined the answers with respect to changes in labour costs and labour productivity to establish whether employers perceive a net cost or a net productivity increase as a result of an ageing workforce. Over all, about half of employers expect an ageing workforce will be associated with a net labour cost increase (53 percent). The table shows large differences between countries. Dutch employers are most sceptical when it comes to expectations about the consequences of an ageing work staff; 74 percent of employers expect a net labour cost increase as the workforce ages and only two percent expects a decline. In Poland the wage-productivity gap is less of an issue; in this country about one third of employers expect a net cost increase and 11 percent expects a net productivity increase.

### ***Tenure wages and employment protection***

In this section we examine tenure wages and employment protection rules as possible underlying predictors of an expected labour cost-productivity gap.

[Here Figure 2] – Seniority wage

Figure 2 shows that 58 percent of employers report wages to rise with tenure to ‘a high’ or ‘some’ extent in the own organisation. Automatic increases in salary scales are mostly observed among Dutch and French organisations (78 and 72 percent respectively). In Germany, only 36 percent of employers indicate that wages rise with tenure in the own organisation. These results on tenure wages correspond largely to results found by the OECD (1998, 2006, 2010a).

Figure 3 shows that 56 percent of employers indicate it is ‘(very) difficult’ to fire a worker with a permanent contract. In Italy, the Netherlands, Sweden, Germany and France a majority of employers perceive a high level of employment protection. In Denmark, only 25 percent of employers report to find it difficult to dismiss a worker, which is in line with the Danish “flexicurity” model. The high perceived level of employment protection in Italy is interesting, because according to OECD (2010b) protection of permanent workers against (individual) dismissal is relatively low in Italy.

[Here Figure 3] – Employment protection

The next step is to test our hypotheses about the two possible factors influencing the labour cost-productivity gap: tenure wages and employment protection rules. The first model of Table 3 presents results from the ordered logistic regression analysis explaining the labour cost-productivity gap by control variables only: organisational features, sector of industry and country. In the second model, we added seniority wage and employment protection.

[Here Table 3] – Explaining expected labour cost-productivity gap

The estimation results show that the steepness of the tenure-wage profile is positively related to the perceived change in the labour cost-productivity gap.<sup>4</sup> In other words, in organisations where wages rise to a higher extent with tenure, employers are more likely to expect a net cost increase due to the ageing of the work staff. Regarding employment protection, the results show that employers who perceive the level of employment protection to be high are more likely to expect a net labour cost increase.

In the literature it is sometimes suggested to include a bargaining structure variable (cf. Addison and Teixeira, 2003), since there is a potential omitted variables problem if unionisation is correlated with employment protection and/or tenure wages. We tested whether this is the case in our model by adding the variable approximating the labour union power. This variable is based on the question: “The influence of labour unions on personnel policies is clearly visible in this organisation” (‘1’ completely disagree, ‘5’ completely agree) (not in table). Adding this variable did not alter our results.

The results show that compared to the reference group (‘industries’), organisations in ‘services and trade’ are less likely to perceive a net cost increase, whereas organisations in ‘education, health care and social work’ more often expect such a gap to occur. Employers who already have a larger proportion of older workers in their staff or who encounter problems with a high absenteeism are more likely to expect a net cost increase. In the different countries, employers have different perceptions regarding the gap between labour costs and productivity due to the ageing of the personnel staff, as is shown in the lower part of Table 3. National contexts may be particularly relevant when examining the effects of tenure wages and employment protection. There are significant interaction effects between country and tenure wage and country and employment protection (see appendix A). For German

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<sup>4</sup> Results of the separate estimation results for the analyses of perceived labour costs and productivity can be obtained from the authors upon request.

employers as compared to other European employers, tenure wages are more positively related to an expected net cost increase. For Polish employers, tenure wages are less related to the perceived gap and for Swedish employers employment protection is less related to the perceived gap. In all countries, the main effects remain significant after adding the two-way interactions.

To gain more insight in the effects of tenure wages and employment protection on the perceived labour cost-productivity gap, we performed a simple counterfactual analysis in which the application of tenure wages and the level of employment protection are varied. We calculated the predicted scores on the dependent variable based on the model in Table 3. We examined a situation in which the tenure-wage profile is complete absent, as well as a situation in which the perceived employment protection is reduced to a minimum level.

[Here Table 4]

Table 4 shows that in the baseline case 58 percent of the employers expect a net cost increase as a result of an ageing workforce and only 6 percent expect a net productivity increase. The central question of this exercise is: to what extent is the share of employers who expects a change in the gap between costs and productivity affected by these labour market reforms? In the extreme case in which wages do not rise with tenure and the level of employment protection is low, 45 percent of employers expect a net cost increase and 10 percent expect a net productivity increase; the model thus shows a 13 percentage points decline compared to the baseline situation in the case of a net cost increase and 4 percentage points increase in the case of a net productivity increase. In other words, although these types of labour market reforms have a substantial effect on the financial sustainability of organisations, they do not

neutralize the expected consequences of an ageing work force: 40 percent of the employers still expect a net cost increase as a result of work force ageing.

### ***Recruitment and retention behaviour***

Table 5 presents the logistic regression analysis of the employers' recruitment and retention of employees as dependent variables. We test whether the perception of a labour cost-productivity gap is a predictor of employers' recruitment and retention behaviour towards older workers. The odds ratio represents the ratio of the probability that employers recruit or retain older workers compared to the probability that they will not hire or retain older workers.

Column 1 of Table 4 shows that employers who expect a net cost increase due to an ageing staff are significantly less likely to recruit older workers. In Column 3 we see that employers who expect a net cost increase also are significantly less likely to encourage employees to continue working until the statutory retirement age in their country. These effects are in line with our hypotheses that the perceived labour cost productivity gap affects recruitment and retention behaviour of older workers.

[Here Table 5] – Recruitment and retention of older workers

The results also show that organisations with a more high-skilled staff are more inclined to retain older workers. This is in line with what one would expect from human capital theory, in the sense that an employer is more inclined to retain older workers, the higher the value of the accumulated knowledge and skills an employee embodies. Furthermore, the results show that employers who already have a large proportion of older workers in their staff are more

inclined to recruit and retain older workers. Personnel shortages positively influence the recruitment and retention behaviour towards older workers.

## **5. Conclusions and Discussion**

Raising the labour force participation of older workers is a key policy objective in the European Union. Negative perceptions of employers on older workers' productivity are often assumed to hamper a further increase of the labour force participation of older workers (OECD, 2006; Van Dalen *et al.*, 2010). This article has examined perceptions of European employers regarding the consequences of an ageing personnel structure. Not only the consequences for the organisation's labour productivity, but also perceived consequences for labour costs were examined. The results show that a majority of European employers in each of the countries in this study does not expect the ageing of their staff to affect the productivity level within their organisation. With respect to the employer's perception of the consequences of ageing on the labour costs the results show much more variation. Many European employers expect labour costs to increase as a result of an ageing work staff, but the percentages differ widely across Europe, from 16 percent of the employers in Poland to 75 percent of the Dutch employers. By combining perceptions on labour costs and productivity the survey shows that about half of employers associate the ageing of the personnel staff with a net cost increase: a situation in which the change in labour costs exceeds the change in productivity. Perceptions of such a gap are not without consequences as they negatively affect both recruitment and retention of older workers.

Tenure wages and employment protection turn out to be important factors explaining the employers' perceptions of a divergence between productivity and labour costs. European employers turn out to associate employment protection rules predominantly with a net cost increase. And employers who face a steep tenure wage profile associate larger net cost

increases than those who face a flat wage profile. Although we find these relationships in each of the countries in our study, the observed differences in perceived employment protection and wage profiles across countries explain to a limited extent the differences in the perceived wage productivity gap *between* countries. This raises two interesting issues for further research. First of all, which other country specific factors influence the perception of a divergence between labour costs and productivity? Future research might focus on age-related fringe benefits, employers' contribution to sickness benefits and other institutional factors. The second issue relates to the variation *within* countries. The level of employment protection is perceived differently within countries. Future research might study the root causes of these different perceptions. For instance, the degree of enforcement of employment protection legislation may be differently perceived by employers, or employers may see more problems in laying off workers when the number of the union members is high within the organisation.

A final note on the policy implications. The insights generated by this employer study might suggest avenues for policy makers in tackling the problems of ageing labour markets. Our empirical models shed only some light on unravelling the relationship between age pay and productivity and much more elements not uncovered seem to play a role. A counterfactual in this study shows that even when employment protection and tenure wage systems are abolished 40 percent of the employers still expect a net cost increase, compared to the baseline situation where 53 percent expects such an increase. This suggests that labour market policy has to have a wider scope than is usually assumed and silver bullet solutions like the abolishment of employment protection are not going to solve all the problems of an ageing labour market. Furthermore the country specificity of employer behaviour and perceptions seems to be a hardwired element of most labour market studies and in that respect it is a silent reminder to policy makers that popular solutions like exporting the Danish model of flexicurity to other countries must be met with some scepticism. Good or best practices are

often hard to copy as the tacit mechanisms of labour markets and organisations will be lost in translation.

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## Appendix A

	Denmark		France		Germany		Italy		Netherlands		Poland		Sweden	
	<i>B</i>	<i>t-value</i>	<i>B</i>	<i>t-value</i>	<i>B</i>	<i>t-value</i>	<i>B</i>	<i>t-value</i>	<i>B</i>	<i>t-value</i>	<i>B</i>	<i>t-value</i>	<i>B</i>	<i>t-value</i>
<i>Main effects</i>														
Seniority wage	0.04**	3.44	0.05**	4.19	0.03*	2.59	0.04**	3.89	0.04**	3.40	0.05**	4.30	0.05**	4.31
Employment protection	0.03*	2.47	0.03**	3.14	0.03*	2.49	0.03**	3.00	0.04**	3.40	0.03**	3.19	0.04**	4.05
<i>Two way interactions</i>														
Seniority wage * COUNTRY	0.03	0.97	-0.04	-1.16	0.06*	2.15	-0.01	-0.33	0.03	1.03	-0.04*	-1.56	-0.04	-1.35
Employment protection COUNTRY	0.04	1.53	-0.01	0.10	0.04	1.43	0.01	0.21	-0.02	-0.81	-0.01	-0.35	-0.07*	-2.48
<i>Control variables</i>														
Adj R <sup>2</sup>	0.11		0.11		0.11		0.11		0.11		0.11		0.11	
N	4947		4947		4947		4947		4947		4947		4947	

### NOTES:

<sup>a</sup> Dependent variable: labour cost – productivity gap, country name: COUNTRY in two-way interaction terms

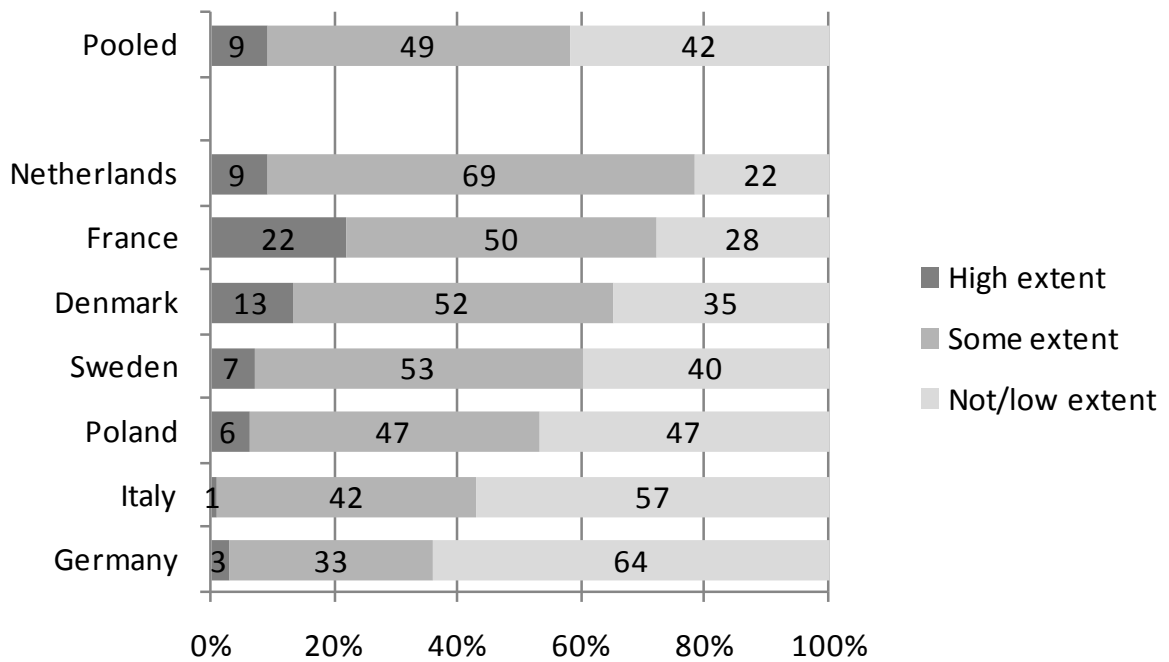
<sup>b</sup> Controlled for: sector of industry, organizational features (size, share of high-skilled workers, share of workers with fixed-term temporary contract, share of older workers, extent of absenteeism/ sickness rate), countries

Source: ASPA employers survey (2009)

Figure 1 - Relevant groups in the analyses of a labour costs-productivity gap as a result of an ageing personnel structure.

	Labour costs		
Productivity	Decrease	Stable	Increase
Decrease	0	1	1
Stable	-1	0	1
Increase	-1	-1	0

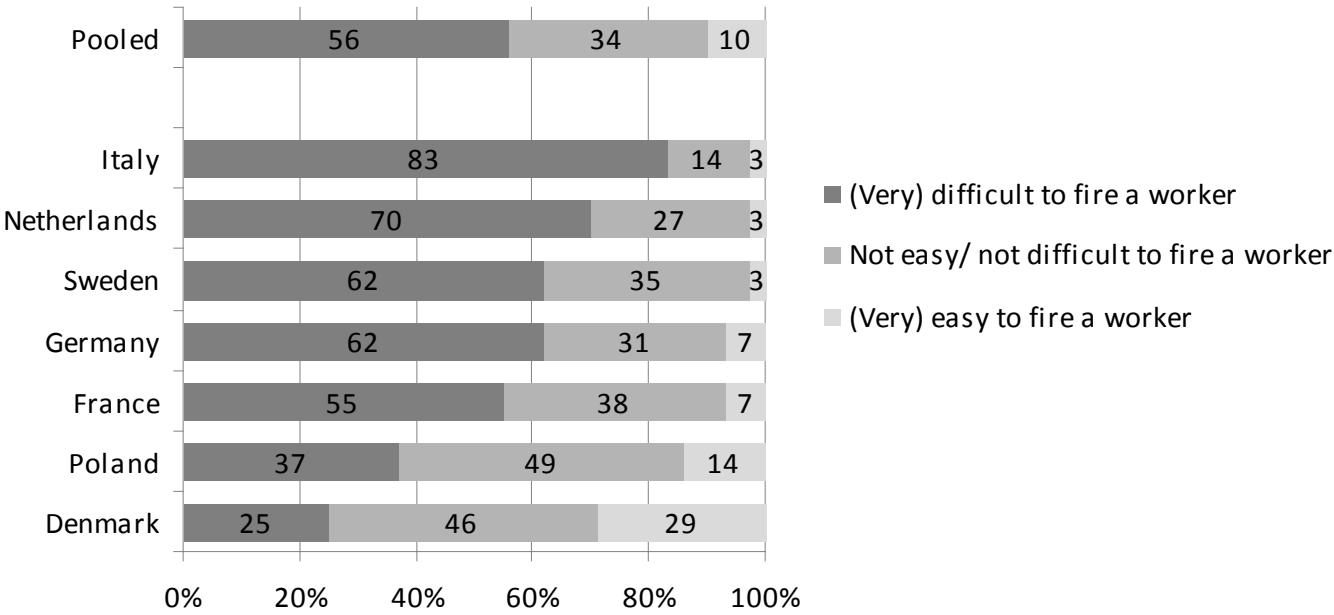
Figure 2 – European employers’ perception of wages rising with tenure <sup>a</sup> (%)



<sup>a</sup> Based on the question: “To what extent, apart from the employee’s formal qualification and the function in the organisation, do wages rise with tenure (i.e the number of years that the employee has worked in your establishment)?”

Source: ASPA employers survey (2009)

Figure 3 – European employers’ perception of level of employment protection<sup>a</sup> (%)



<sup>a</sup> Based on the question: “How difficult is it in your establishment to fire a worker with a permanent contract?”

Source: ASPA employers survey (2009)

**Table 1 – Descriptive statistics**

	<i>Mean</i>	<i>St.dev.</i>	<i>Min</i>	<i>Max</i>
<b>Dependent variables</b>				
Expected labour cost-productivity gap (-1 = decline, 1 = increase)	0.53	0.60	-1	1
Recruitment older workers (0=no, 1=yes)	0.14	0.35	0	1
Retention older workers (0=no, 1=yes)	0.26	0.44	0	1
<b>Independent variables</b>				
Tenure wages (1 = not, 4 = highly applicable)	2.57	0.78	1	4
Difficulty of dismissing a worker (1 = very easy, 5 = very difficult)	3.81	0.96	1	5
<i>Control variables</i>				
Sector of industry (Industries = reference category)				
Construction	0.09	0.28	0	1
Services and trade	0.32	0.47	0	1
Public sector	0.12	0.33	0	1
Education, health care and social work	0.21	0.41	0	1
Size (logarithm)	4.46	1.52	0	13.12
Share of high-skilled workers	0.26	0.29	0	1
Share of workers with fixed-term temporary contract	0.11	0.18	0	1
Share of older workers	0.25	0.17	0	1
Extent of absenteeism/ sickness rate	1.43	0.62	1	3
Experienced shortages (no shortages = reference category)				
Some vacancies	0.36	0.48	0	1
Many vacancies	0.79	0.27	0	1
Countries (Denmark = reference category)				
France	0.05	0.21	0	1
Germany	0.16	0.37	0	1
Italy	0.14	0.35	0	1
Netherlands	0.19	0.40	0	1
Poland	0.18	0.39	0	1
Sweden	0.09	0.29	0	1



**Table 2 – European employers’ perceptions of the consequences<sup>a</sup> of an ageing personnel structure of own organisation (%)**

<i>Consequences</i>		<i>Pooled</i>	<i>Denmark</i>	<i>France</i>	<i>Germany</i>	<i>Italy</i>	<i>Netherlands</i>	<i>Poland</i>	<i>Sweden</i>
Labour costs	Increase	44	33	51	48	49	75	16	44
	Same	52	61	43	51	48	24	74	50
	Decline	4	6	6	1	3	1	10	6
Labour productivity	Increase	10	10	7	10	14	8	10	8
	Same	62	71	64	54	62	58	61	55
	Decline	28	19	28	36	25	34	29	37
Cost-productivity gap <sup>b</sup>	Increase	53	41	55	61	50	74	31	59
	Same	41	51	38	36	45	24	58	35
	Decline	6	8	7	3	5	2	11	6

<sup>a</sup> Based on the question: "If the average age of your personnel increases by 5 years, what will be the effect on..."

<sup>b</sup> Based on cross-tabulating expected consequences in labour costs and labour productivity.

Source: ASPA employers survey (2009)

**Table 3 –Explaining expected labour cost-productivity gap (ordered logistic regression analysis)**

		GAP <sup>a</sup>			
		Model 1		Model 2	
		Odds ratio	z-value	Odds ratio	z-value
Wage	Tenure wage			1.18**	4.29
Employment protection	Difficulty of dismissing a worker			1.13**	3.40
<i>Control variables</i>					
Sector of industry:	Industries = reference category	-	-	-	-
	Construction	0.83	-1.56	0.84	-1.46
	Services and trade	0.87	-1.72	0.85*	-2.00
	Public sector	1.20	1.74	1.09	0.77
	Education, health care and social work	1.32**	2.90	1.22*	2.03
Organisational features:	Size (logarithm)	1.11**	4.74	1.10**	4.42
	Share of high-skilled workers	1.03	0.30	1.00	0.03
	Share of workers with fixed-term temporary contract	0.73	-1.76	0.76	-1.55
	Share of older workers	1.58*	2.54	1.59*	2.57
	Extent of absenteeism/ sickness rate	1.29**	4.95	1.26**	4.50
Countries:	Denmark = reference category	-	-	-	-
	France	2.42**	6.76	2.11**	5.57
	Germany	2.96**	9.94	2.79**	8.79
	Italy	1.61**	4.62	1.43**	3.03
	Netherlands	5.90**	15.06	5.11**	13.31
	Poland	0.83	-1.74	0.82	-1.80
	Sweden	2.00**	6.54	1.85**	5.53
Adj R <sup>2</sup>		0.07		0.08	
N		4947		4947	

<sup>a</sup> The scale of the expected labour cost-productivity gap ranges from -1 to 1 and was based on cross-tabulating expected consequences in labour costs and labour productivity

Source: ASPA employers survey (2009)

**Table 4: Results of a counterfactual analysis of the consequences of an abolishment of tenure based wages and employment protection on an expected labour cost-productivity gap**

	Share of employers expecting a labour cost-productivity gap		
	Net cost increase ( $\Delta\text{cost} > \Delta\text{productivity}$ )	Stable ( $\Delta\text{cost} = \Delta\text{productivity}$ )	Net productivity increase ( $\Delta\text{cost} < \Delta\text{productivity}$ )
<b>Base line model<sup>a</sup></b>	53%	41%	6%
<b>1. Wages that do not increase with tenure<sup>b</sup></b>	48%	44%	8%
<b>2. Low level of employment protection<sup>c</sup></b>	46%	46%	8%
<b>3. Combined effects of 1 and 2<sup>d</sup></b>	40%	50%	10%

- (a) Baseline model is based on the estimation results of model 2 in Table 3.
- (b) In this counterfactual analysis the score for tenure wages is set to one (lower limit)
- (c) In this counterfactual analysis the score for employment protection is set to one (lower limit)
- (d) In this counterfactual analysis both, the scores for tenure wages as well as employment protection is set to one

Table 5 – Explaining European employers’ recruitment and retention of older workers  
(logistic regression analysis)

		Behaviour towards older workers			
		Recruitment		Retention	
		Odds ratio	z-value	Odds ratio	z-value
<i>Expected labour cost-productivity gap</i>		0.87**	-2.83	0.91*	-2.36
<i>Control variables</i>					
Sector of industry:	Industries = reference category	-	-	-	-
	Construction	1.04	0.23	1.11	0.78
	Services and trade	1.22	1.65	1.07	0.73
	Public sector	0.89	-0.83	1.11	0.91
	Education, health care and social work	1.22	1.49	1.06	0.55
Organisational features:	Size (logarithm)	1.23**	7.28	1.15**	5.64
	Share of high-skilled workers	1.07	0.40	1.32*	2.13
	Share of workers with fixed-term temporary contract	0.75	-1.23	0.83	-0.92
	Share of older workers	3.47**	4.89	3.44**	6.00
	Extent of absenteeism/ sickness rate	1.06	0.76	0.95	-0.78
Experienced shortages (no shortages = reference category)	Some vacancies	1.77**	6.09	1.63**	6.43
	Many vacancies	2.66**	6.21	1.71**	3.92
Countries:	Denmark = reference category	-	-	-	-
	France	0.67	-1.73	1.45*	2.22
	Germany	0.78	-1.81	0.39**	-7.61
	Italy	0.14**	-8.22	0.24**	-9.58
	Netherlands	0.62**	-3.40	0.42**	-7.24
	Poland	0.87	-0.93	1.29*	2.13
	Sweden	0.71*	-1.99	0.65**	-3.17
Pseudo R <sup>2</sup>		0.08		0.08	
N		4912		4912	

Source: ASPA employers survey (2009)