

Employees: too expensive at 50 ? The age component in wage-setting

Y. Saks

Introduction

The rate of employment for people in Belgium aged 55 and over stands at 40 % ⁽¹⁾, or 9 percentage points below the European average and 10 points below the target the Belgian authorities wish to achieve by 2020.

In common with other EU countries, the rate of employment has taken an upward path in recent years but has risen more quickly in Belgium (by 14.5 percentage points, compared with an increase of 12.1 points between 2000 and 2012 for the entire 55-and-above group), even though the country started off with a significantly low level (25 %, compared with 36.8 % in the EU). While the rate of employment for male employees aged 55 and over rose by almost 11 points during this period, the rate of increase for female employees in the same age group was even higher (nearly 18 percentage points), particularly due to the raising of the statutory pension age, as a result of a gradual increase from 60 to 65 between 1998 and 2009.

As the work-age population grows older, the labour demand for this age group poses a crucial economic and social challenge. As the relative wage cost is often singled out as the reason for the lower employment participation rate, this article seeks to verify the basis for this claim.

Our analysis shows that population ageing creates a potential problem for corporate competitiveness in terms of costs and labour availability and for the sustainability of public finances.

(1) Annual average in 2012.

1. Ageing of the population and employees

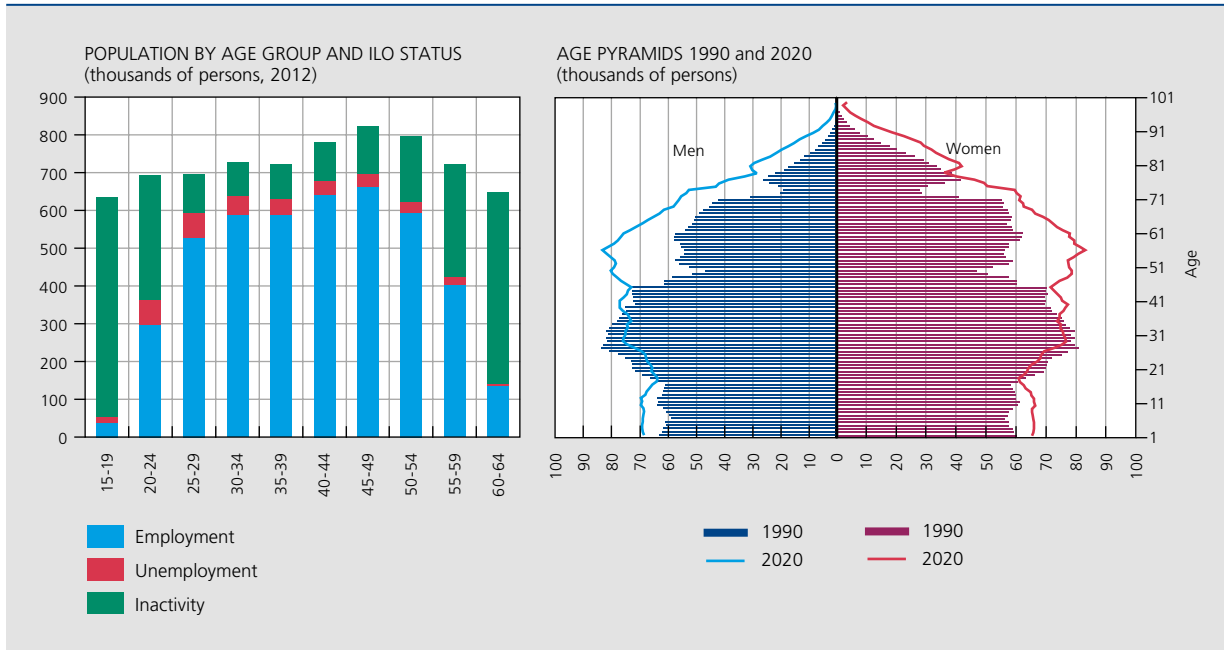
The situation for the various working population age groups presents a contrasting picture. Over eight out of 10 people are employed within the 30 to 44 age group but this percentage declines in the older age groups. The rate of employment is about 75 % for the 50-54 age group and 56 % for the 55-59 one, while barely one in five people is employed in the 60-64 age group.

The size of the different cohorts is extremely variable. The age pyramid helps to illustrate the demographic challenge Belgium will have to rise to, by comparing the age and gender-specific structure of Belgium's population in 1990 with what it is expected to be in 2020.

The pyramid shows the relevance of the baby-boom generation, born between 1946 and 1965. Back in 1990, these were adults within the 25-44 year-old range: age groups with the highest rate of employment. A large percentage of these people will have stopped working by 2020, while the youngest members of the group will then belong to the 50-and-above group, where the rate of employment is currently much lower. In the very near future, a higher number of people aged 55 and over will therefore have to be actively involved in the labour market, otherwise the Belgian economy will suffer even more from the impact of skills shortages already hampering the development of new economic activities in certain regions.

The ageing of the population can already be seen in the age structure of employees in companies.

CHART 1 LABOUR MARKET PARTICIPATION AND THE DEMOGRAPHIC CHALLENGE

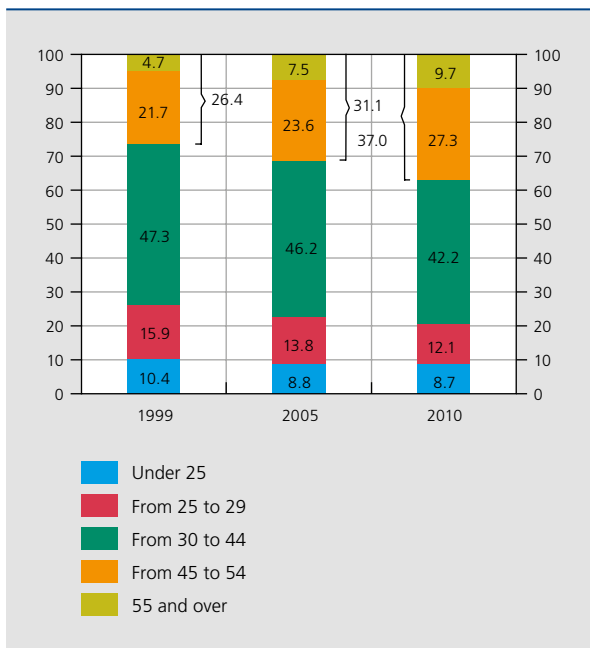


Sources : DGSEI, FPB.

A representative sample of private sector companies showed that the 45 to 54 and 55-and-above age groups

accounted for 21.7 and 4.7 % respectively of staff in 1999 but the figures rose to 23.6 and 7.5 % in 2005 and to 27.3 and 9.7 % in 2010. The average employee age in the private sector therefore saw a more-than-two-year increase between 1999 and 2011. A similar pattern was reported in the public sector.

CHART 2 CHANGES IN AGE STRUCTURE OF EMPLOYEES IN THE PRIVATE SECTOR (%)



Source : DGSEI (SES).

That is the situation for stocks of workers while entries and exits of employees also show contrasting age profiles. An examination of all recruitments⁽¹⁾ in 2012, with the private and public sectors combined, shows that 46 % of new hires belong to the 20-29 age group, while the proportion for the 55-and-above group is not even 3 %. A decreasing monotonic relationship is observed as people age. The hiring rate is cut in half between the 45-49 year-olds and the 50-54 year-olds, from 8.1 to 4.2 %, seemingly indicating a change in the recruitment behaviour of firms, which are recruiting a lot less employees from the 50-and-above group.

Consequently, the recruitment rate for older staff is low in Belgium, in an international comparison as well. A recent OECD study (2014) reports that the hiring rate for 55-64 year-olds is much lower than the rate for 25-54 year-olds

(1) The approach to this concept is based on people of working age having found employment within the last three months or less, according to labour force surveys. No distinction is made in this case between employment on a salaried or self-employed basis.

in all European countries but Belgium scores the lowest of all the 24 economies compared.

The exit age profile for employment is completely different from the recruitment one. People in the youngest age groups figure prominently among exits, primarily because they are proportionally more often in fixed-term-contract jobs, including temporary employment. Job losses affecting 20-29 year-olds account for 28 % of the total (while they represent only 19 % of all employees) but increase sharply starting from 55 years of age to account for over 25 % of the total.

These patterns are fairly stable over time. Recruitment in the three highest age groups (45-49 year-olds) was on the rise during the period from 1999 to 2012, as in the case of 50-54 year-olds but to a lesser degree. Conversely, the labour force surveys show that recruitment among 55 to 64 year-olds remains very low (there were roughly 5 000 new recruits among this age group throughout the entire country in 2012: these statistics are therefore close to the reliability limit). Nor is there any trend increase reported for hiring rates within the latter group.

The higher employment rate for older employees, particularly in the case of the 55-and-above group, is therefore the outcome of a higher level of job retention for these people, as any employees in this age group losing their jobs still find it difficult to find new positions. This observation

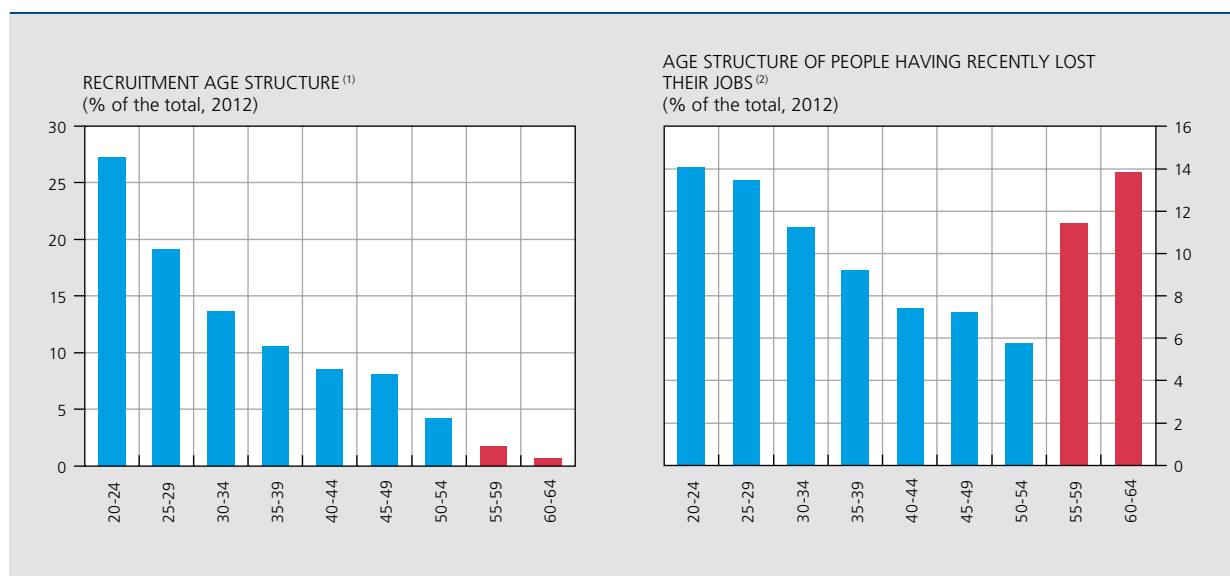
is important at the start of a period when there will be a need to involve a higher percentage of older employees, whose employability has to be facilitated, and ensure a match between labour costs and productivity.

In common with most other European countries, Belgium introduced a series of earlier retirement measures at the end of the last century. These schemes still play a key role in labour market exits prior to the statutory pension age. In the past, people's entitlement to use these schemes was regarded as being beneficial to staff and employers alike. Access to the paths to an early exit from the labour market has gradually been made more difficult in recent years as a result of raising the age and career conditions for entitlement, applicable in particular to the pre-pension system (renamed "unemployment with employer top-up", along with a new strategy of helping these people back into work) and its counterpart for the former employees of smaller firms (scheme for older unemployed people exempt from seeking work).

Similarly, previously confined to the under-50s, monitoring of unemployed people's availability for work was extended to people over 55 as from 1 January 2013 and will apply to 58-year-olds in 2016.

An estimate of the percentage of people in the 50-64 age bracket availing themselves of a labour market exit scheme prior to their statutory pension age can be made

CHART 3 RECRUITMENTS AND EXITS BY AGE GROUPS



Source: EU (LFS).

(1) People having found work within three months or less.

(2) Job loss during the year covered by the survey or the previous year, on all grounds, including termination of temporary contracts, retirement, early retirement, etc.

TABLE 1 EARLY LABOUR MARKET EXITS FOR PEOPLE AGED 50 TO 64⁽¹⁾
(men and women, as a percentage of the corresponding population)

	50-54 years old		55-59 years old		60-64 years old		Total	
							50-64 years old	
	2000	2013	2000	2013	2000	2013	2000	2013
Pensions	1.3	1.0	3.8	3.3	41.7	29.0	14.4	10.2
Unemployed with employer top-up, exempt from seeking work	1.3	0.0	7.2	3.7	13.0	12.3	6.6	4.9
Older unemployed not seeking work	8.1	0.0	11.1	2.5	5.3	8.2	8.2	3.3
Full-time time credit and career break	0.3	0.1	0.3	0.2	0.0	0.0	0.2	0.1
Invalidity	5.7	7.7	7.5	9.6	6.4	8.9	6.5	8.7
Total	16.6	8.9	29.8	19.2	66.5	58.4	35.8	27.2

Sources: DGSEI-FPB, NIHDI, NEO, NPO, SdPSP.

(1) Estimated totals, calculated on the basis of a mixture of data not necessarily related to the same period or recorded at different times. As pension data for the year 2000 could be affected by double counting in the case of careers in more than one sector, it was assumed that the percentage of mixed careers in the sum of all the pensions was identical to that for 2013. The aggregate figures thus obtained are only of an indicative nature. Moreover, they are not necessarily consistent with the number of inactive people according to the harmonised statistics featured in the labour force surveys, as a gainful activity is sometimes allowed on top of benefits being received.

by aggregating the following categories: the number of retired people, unemployed not seeking work with employer top-up, elderly unemployed people exempt from seeking work, elderly employees taking a full career break or receiving a full time-credit, and those on invalidity benefit. In 2013, 27 % of people aged 50 to 64 were covered by one or another early exit scheme. In most cases, it was a question of a pension (roughly 10 %), followed by invalidity (about 9 %).

However, the percentage is significantly down on the year 2000, when the various schemes were being used by nearly 36 % of people aged 50 to 64. The trend is perceptible for all the schemes taken into consideration, apart from invalidity. Expressed as a percentage, the fall was the greatest for the scheme covering elderly unemployed people and for pensions.

The main determining factor for the 50-54 year-olds is the abolition of the option of qualifying for the scheme for older unemployed not seeking work. All in all, solely 9 % of people belonging to this age group took advantage of one of the various exit schemes in 2013, compared with 16.6 % in 2000.

In the 55 to 59 age group, solely the percentage of those on invalidity benefit increased, a trend that is more than offset by a fall in the proportion of unemployed people with employer top-up and, above all, the percentage of

elderly unemployed. All in all, the share represented by the various schemes has fallen from about 30 to 19 % in this age group.

Conversely, use of the unemployment with employer top-up scheme has fallen only very slightly amongst 60 to 64 year-olds, while the relative significance of the elderly unemployed and invalidity schemes has increased considerably. On the other hand, the proportion of pensioners has declined sharply. Accordingly, roughly 58 % of the 60-64 year-olds availed themselves of one of the different schemes under consideration in 2013, compared with 66 % in 2000.

This data confirm the need to have tight controls over the possibility of early retirement in Belgium, as its impact on the labour market participation of potential beneficiaries is clearly apparent. Therefore, as a result of the rather generous early withdrawal paths, the large number of labour market exits and the low levels of recruitment within these age groups, the estimated professional career length is shorter in Belgium than in the "best-performing" European countries, mainly the Scandinavian countries, the Netherlands and Germany. These countries have all applied extensive reforms to their early labour market exit schemes. Some have also revised the regulations governing their pension schemes in particular index-linking the normal retirement age to life expectancy or intensifying the financial penalty in the event of early retirement.

2. Wage and age

Covering a representative sample of private-sector firms employing at least 10 people, Structural Earnings Surveys (SES) form the basis for analysing the relationship between age and wage in Belgium and various EU countries.

A wage pressure indicator is defined as the ratio of the average monthly wage of 50-59 year-old employees to 30-39 year-old employees.

Wage pressure measured in this way is much greater in Portugal and Italy but it is also high in Belgium, Luxembourg and Spain while much more moderate in the Scandinavian countries, the Netherlands and Germany. The United Kingdom stands out even more, as the wages of 50-59 year-old employees are lower than those in the 30-39 category.

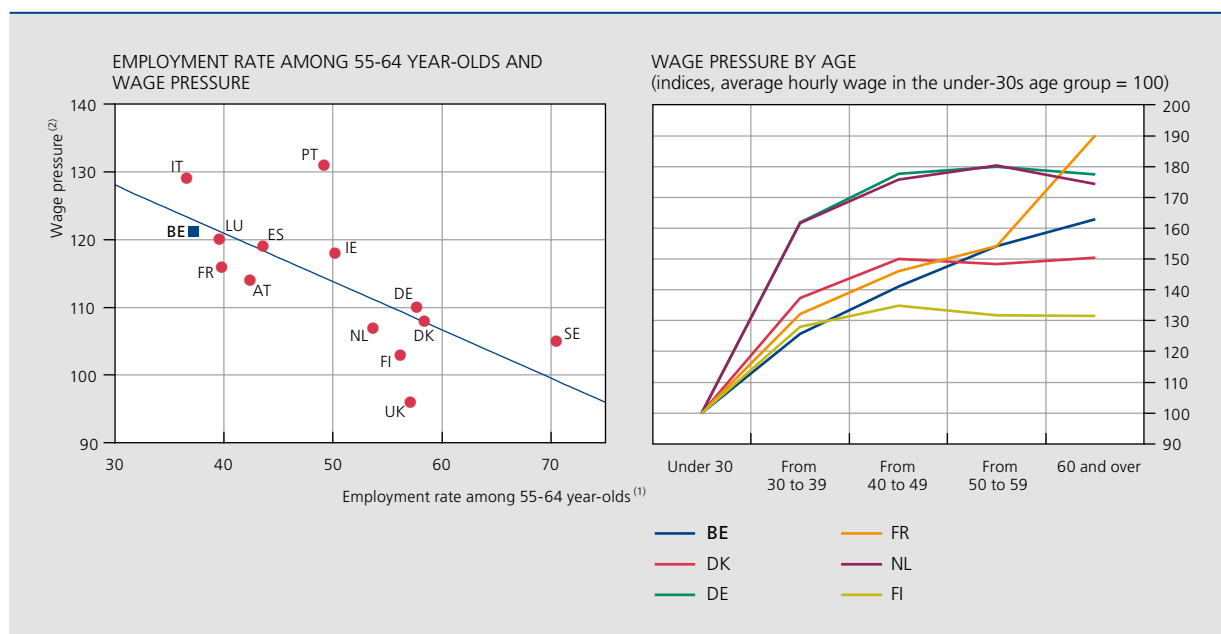
A bivariate relationship shows a negative correlation between the wage pressure rate according to age and the rate of employment among people aged 55 and over. In other words, a flatter wage structure goes hand in hand with a higher rate of employment amongst older employees according to this dataset relating to the EU15 countries. This observation may not yield any causal conclusion but employees aged 55 and over might presumably be ousted for relative cost reasons. The financial factor obviously does not rule out the impact of other mechanisms.

Consequently, wage profiles are linked to the age factor in all European countries to some extent⁽¹⁾ but the remuneration profile is seen to be continuing to rise for the over-50s in Belgium, whereas it flattens out until the date of retirement in the Scandinavian countries, the Netherlands and Germany. However, this development might be attributed to some extent to composition effects: as the early retirement systems continue to be more generous and, accordingly, more frequently used in Belgium and France than in other countries under review, there could be a process of (self-) selection for people staying on at over 50 years of age, with solely the biggest earners continuing to work, while the others make wide use of the early retirement options. This situation has to change, with the early exit opportunities becoming fewer and fewer. A mechanical flattening of the wage pressure curve may therefore be expected in due course.

The social dialogue should take this question into account in order to encourage employees to stay on longer but without unduly affecting business costs. It will be up to the public authorities to facilitate agreements on curbing wage

(1) The European Directive 2000/78/EC of 27 November 2000 establishing a general framework for equal treatment in employment and occupation prohibits any form of discrimination based on religion or belief, disability, age or sexual orientation in an employment relationship. Several sectors in Belgium have age-specific wage scales on the basis of collective agreements. All these legislative texts have had to be amended in order to abolish the age criterion.

CHART 4 PROFESSIONAL CAREER AND WAGE PRESSURE BY AGE IN VARIOUS EU COUNTRIES



Source: EC (LFS, SES).

(1) Ratio of 55-64 year-old employees to the overall population in this age category (%).

(2) Ratio of the average monthly wage of 50-59 year-old employees, with the wage level of the latter group being equal to 100.

cost growth at the end of careers, while continuing to attach great value to seniority and experience (as a reflection of higher productivity), by reducing social security contributions, where appropriate.

2.1 Employer-size effect

The Belgian component of the SES shows that, in terms of averages, wages increase in line with the size of the employer. This refers to the hourly wages of full-time employees. Even when made conditional on employees' characteristics and the branch of activity, the "size" effect continues to apply.

There are various explanations for this. Larger firms are reported to be in a better position to hire skilled staff. Their higher average level of profitability, thanks in particular to their market power, makes them able to offer better wages than smaller companies. These large firms are also said to find it more difficult to monitor the activities of staff, who are therefore better paid to ensure they work hard enough.

The firm start-up date and its size also have a bearing on each other. Older firms generally tend to be larger and comprise more employees in the 50-and-above group. Similarly, smaller companies tend to be more recent and

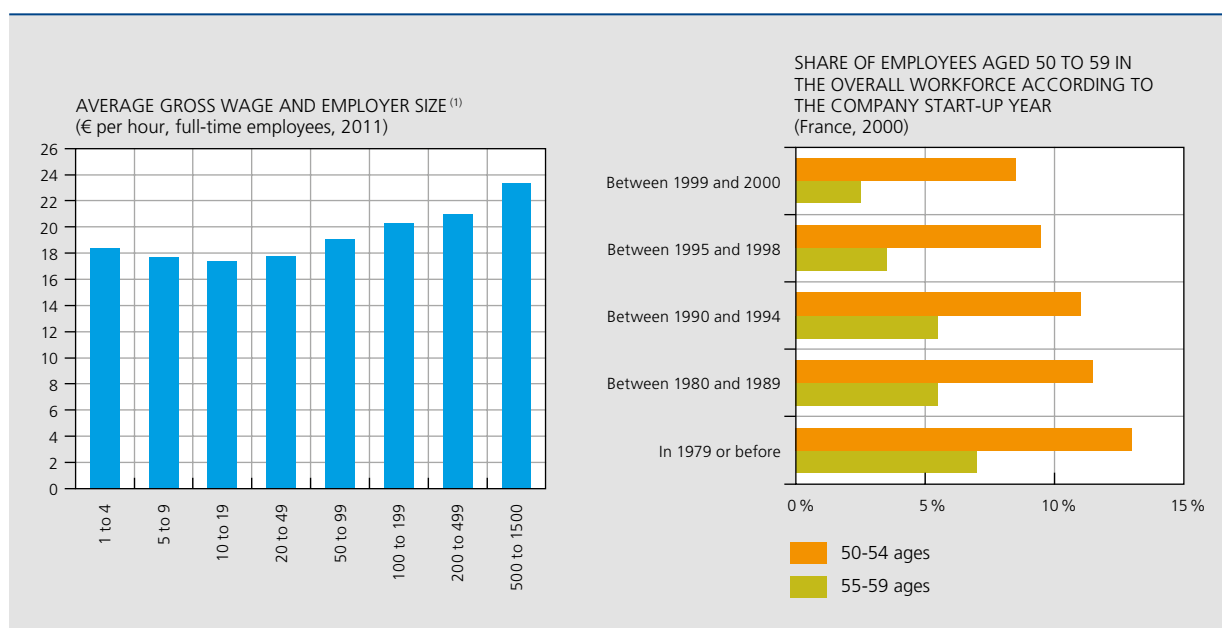
have a younger workforce on average. How old employees are depends not only on the company's history, start-up date and hiring and firing policy but also on its field of activity (expanding or declining). The data in the right-hand panel of chart 5 applies to France (Aubert and Crépon, 2003) as the Belgian microdata in the SES does not include the start-up dates of companies.

2.2 The branch-of-activity effect

The aggregate wage statistics show significant differences depending on the branch of activity. Wages are lower than the average in the hotel and catering business, construction and transport, while being higher in the financial services, scientific and technical services and the energy sector.

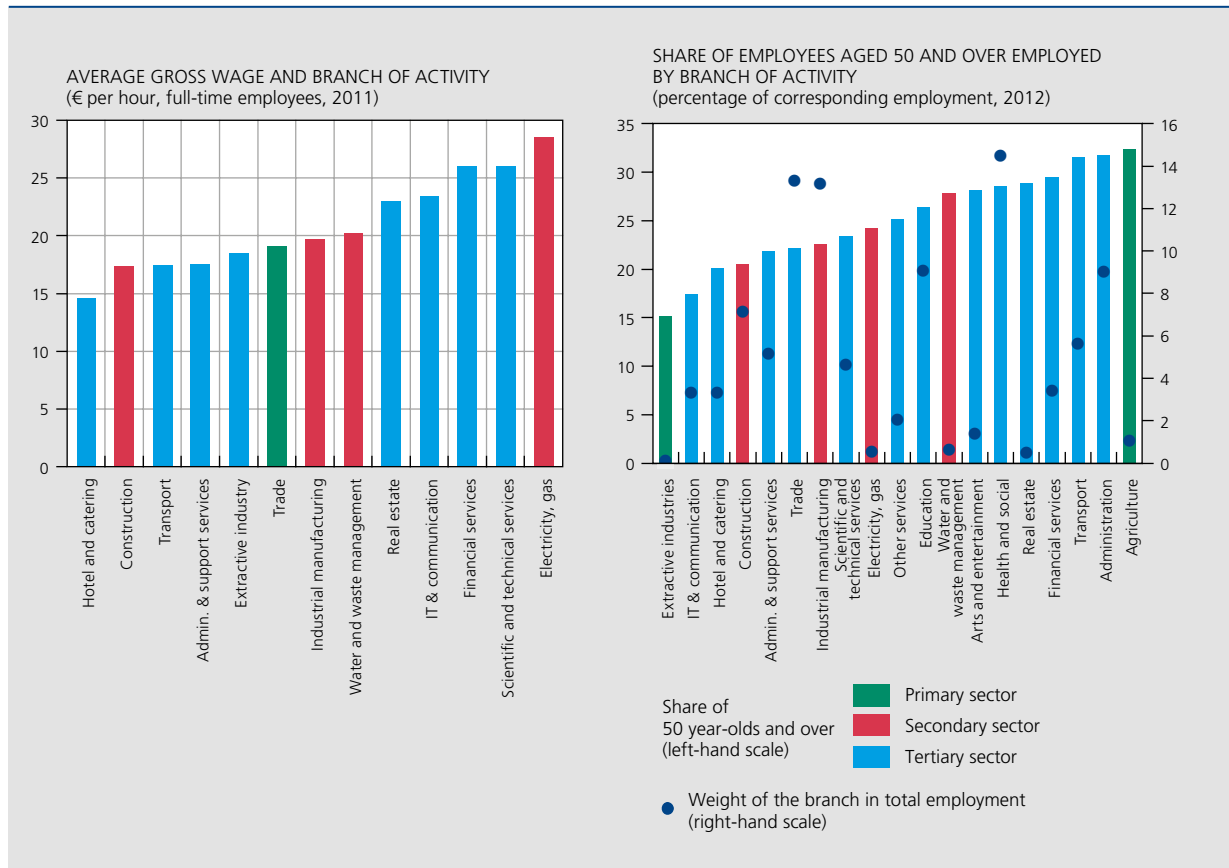
These contrasts are partly ascribed to the staff profile: the proportion of employees with lower educational attainments is higher in the hotel and catering business than in financial services firms and the energy sector. However, even when made conditional upon the characteristics of staff, the dissimilarities between branches remain significant. Hence other factors are involved, including the unobserved characteristics of the workforce (competence, risk aversion, for example) and profitability gaps between sectors, as reflected to some extent in wage levels.

CHART 5 WAGE-DETERMINING FACTORS: EMPLOYER-SIZE EFFECT



Sources: DGSEI (SES), INSEE.
(1) Number of employees in a local unit.

CHART 6 WAGE-DETERMINING FACTORS: BRANCH-OF-ACTIVITY EFFECT



Sources: DGSEI (SES), EC (LFS).

The ranking of branches of activity by the number of employees aged 50 and over working there is inconsistent with their being ranked according to the average wage level. In other words, the composition in terms of age explains only a small percentage of the wage differences reported among the branches.

The 50-and-above group is primarily active in non-market services, such as administration or health and social work and also in the transport sector, real estate and financial services but relatively less involved in computer technology and communications, the hotel and catering business, construction and retail trade.

This breakdown of employees in the 50-and-above group is partly explained not only by the working conditions and hard work involved (hotel and catering, construction) but also by the fast-paced technological developments making some of the expertise acquired obsolete. This also reflects the impact of restructuring within the various fields of activity.

2.3 Worker-profile effects: level of education and experience

Higher educational attainments open up more career opportunities, theoretically allowing people to carry out more productive activities and also reflected in better wages. The wage of a highly-qualified young person (under 25, having gained a higher education qualification) living in Belgium is 13% higher than a young unskilled person (who did not complete secondary school). A young medium-skilled person (holding a higher secondary education qualification) earns 2% more on average than a young unskilled person.

Education level gaps tend to widen as workers get older. In the case of 30 to 44 year-old men, their hourly wage is higher than that of unskilled men of the same age, by 73 and 8% respectively, depending on whether they are highly-skilled or semi-skilled. The increase is particularly big for people with a high level of education, which results in more skills being required and valued in a modern economy.

This positive relationship between educational attainment and wage levels may be explained in particular by the human capital or signal theory. The human capital theory holds that the knowledge and skills people build up, primarily through their studies, boost their productive capacity, whereas the signal theory claims earning qualifications mainly enables employees to highlight characteristics that are not immediately observable (hard-working, talent, intelligence, etc.). These two theories therefore fail to agree on why employers are prepared to pay an education-related wage premium. The first theory suggests education boosts wages because it is seconded by greater productivity, while the second one believes it acts as a kind of “filter” for employers but is not in itself a key factor for determining the productivity differences between employees. The two effects probably exist alongside each other.

At aggregate level, women are seen to be less well paid than men, mainly because they are employed in lower-paying sectors and they break off their careers more frequently than men owing to family commitments. If it is not a statistical problem (the relevant groups being small ones), the chart also illustrates the “glass ceiling” the highest-qualified women come up against: their final earnings are seen to stall compared with their male counterparts, unlike the situation for the low- and semi-skilled.

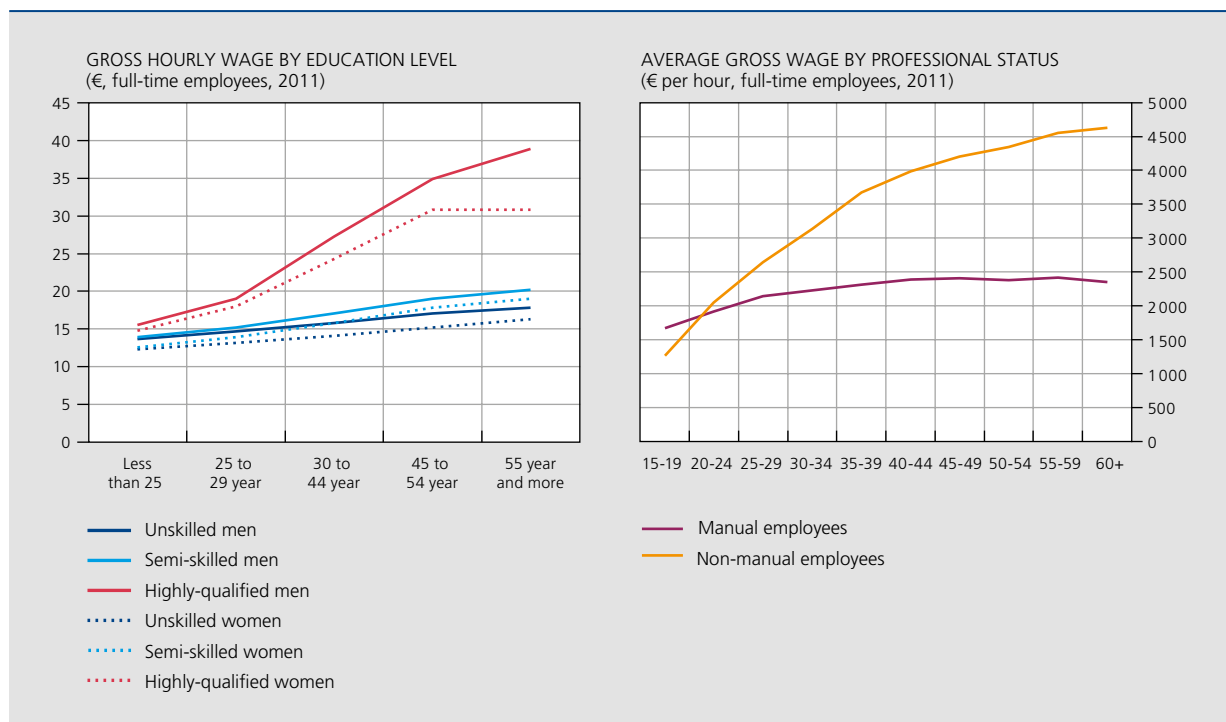
Wages increase as people get older across all categories. According to the human capital theory, this rise is based on the experience of employees and hence their productivity, while also reflecting the extent to which the people in question have changed their jobs and duties during their professional careers.

The increase might also be based on incentive purposes. According to the deferred payments theory, employers strive to keep people working for their businesses and keep them motivated by opting for an in-service wage profile that is steeper than the productivity profile. At the start of their careers, young employees therefore seem to be under-paid on average, whereas the final earnings tend to exceed productivity.

2.4 The seniority and professional-status effects

Experience with the same employer, or seniority, is also valued. The reward of seniority reflects the firm-specific experience built up and the match quality. In other words, seniority is an endogenous variable to some extent because the more the match is appreciated by both parties, the less likelihood there is of changes of employer.

CHART 7 WAGE-DETERMINING FACTORS : EDUCATION, EXPERIENCE



Source : DGSEI (SES).

It is impossible to make a distinction between the effects of experience, seniority and the age of the employee simultaneously, without any additional assumption because these three values show a similar trend if the person stays with the same employer.

The social dialogue in Belgium is based on joint committees that differ for manual workers and clerical employees. These authorities are called upon to settle a series of issues and apply the outcomes to all firms that fall within their sphere. Collective agreements establishing occupational classifications and the corresponding wage scales for employees generally provide for wage changes to be based on the clerical employee's seniority, whereas no such adjustment is made for manual workers, except in the case of short-term seniority (less than six months, between six months and one year and over one year).

At aggregate level, this is reflected in age-specific wage profiles being clearly different for manual and non-manual employees. The slow growth of manual employees' wages is also a reflection of their lower educational achievements on average and the experience they have acquired being less valued in their types of occupation.

Estimates according to which experience (approximated by the age of the employee minus the length of the latter's studies, taking account of the employee's higher qualifications) and seniority (for which precise data is available) are separated show that it is above all experience (and therefore age) that explains the difference between the earnings of manual and non-manual employees, with seniority having a more comparable effect for both statuses.

The distinction made between manual and non-manual statuses goes right back to the beginning of Belgian labour law. The statutory criterion for distinguishing between the manual employee and non-manual employee is based on the type of work carried out, with an individual being described as a manual or non-manual employee according to whether the work involved is primarily intellectual or otherwise. This criterion was quite relevant at the time when the legislation was introduced but the social and economic context has changed over time, making its application increasingly difficult. This difficulty is

exacerbated by the increasing complexity of occupations as a result of the many areas where technological progress has been achieved in recent decades.

This distinction has been gradually erased from labour laws in most of the other European countries. The negotiations surrounding this issue in Belgium were particularly long-drawn-out. The Constitutional Court announced in July 2011 that the inconsistency of the rules governing notice and unpaid first day of sick leave, depending on whether the employee is described as manual or non-manual, was discriminatory and violated the Constitution. The Court judgment catalysed the bargaining process. The compromise reached in the end was expressed in the Law of 26 December 2013 on the introduction of a single status. The legislation came into force on 1 January 2014, with the new provisions creating a dismissal and resignation system that was exactly the same for all employees, whether their occupation be manual or intellectual, while respecting past "entitlements" for both employees and employers in order to ensure a smooth transition from the old system to the new one. Compared with the previous situation, periods of notice have been lengthened significantly for manual employees and reduced slightly⁽¹⁾ for non-manual employees.

As we have seen, the wages of manual employees increase a lot less according to seniority than is the case with clerical employees. The current law does not call into question these different wage scale developments.

3. Productivity and age

3.1 Age and performance

A recent study by Mazzonna and Peracchi (2012) considered the link between age and four components of cognitive functioning (orientation, memory (immediate and delayed recall), verbal fluency⁽²⁾, numeracy), by making a distinction between people still working and people who take (early) retirement⁽³⁾, based on SHARE (Survey on Health, Ageing and Retirement in Europe) data⁽⁴⁾. Wide disparities are seen between the two groups: the scores for people still working are systematically higher for almost all the components tested. The scores are also seen to decline slightly with age, for people still employed as well, particularly in the case of memory and verbal fluency. The decline is more noticeable in the case of retired people.

The scores tend to confirm that the rate of cognitive decline increases after stopping work.

(1) In due course, when the new system has been fully phased in, the periods of notice for non-manual workers will be significantly shorter compared with the situation prior to 1 January 2014, particularly for employees with long seniority.
(2) This is an assessment of verbal proficiency, tested, typically, by asking the person to specify within a certain time all the names belonging to one class (fruit or animals) that come to mind or all the names starting with a letter chosen by the examiner.
(3) This group of people who have taken (early) retirement also includes unemployed people because in most countries the unemployment option is used as form of early retirement from the labour market.
(4) This is a survey carried out amongst a sample representative of Europeans aged 50 and over and more than 11 countries (AT, BE, CH, DE, DK, ES, FR, EL, IT, NL and SE). The waves used are those for 2006 and 2008.

Two conclusions are implied by this finding. First of all, early labour market exit schemes are even more costly than at first sight. A labour market exit involves a loss of human capital, given that people would be less encouraged to nurture the capital acquired during their working lives. Second, the loss would occur not just when a person stops working but would increase the longer the person is retired.

According to other findings, the losses in terms of human capital are on average less for people with higher educational attainments, although there is a wide range of individual situations.

3.2 Measuring productivity in terms of employees' contributions to a firm's productivity

Psychometric tests do not take good account of people's experience, collaborative aspects and the social skills that play a key role in productivity at work, nor do they reflect the fact that the type of activities to be carried out change during a professional career. Rather than approximating the individual productivity of employees via such tests, all that can be done is to measure aggregate productivity. This way of addressing this issue was used for the first time by Hellerstein *et al.* (1999).

(1) Across countries, the national regulatory framework also plays a role: this may be more or less conducive to the job mobility of employees (regulations for dismissals, the transferability of seniority and rights built up under the second-pillar pension schemes, etc.)

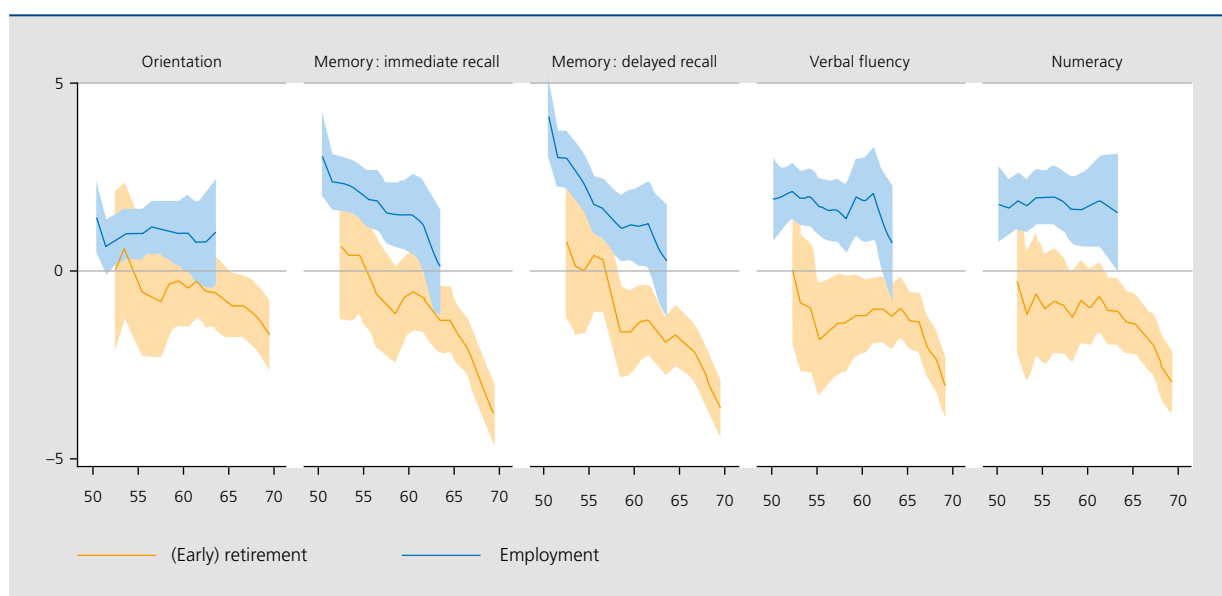
The productivity of each employee is supposed to make an impact on the firm's overall productivity and vice versa. An attempt is therefore made to establish a link between the shares represented by categories of employees belonging to the workforce of firms and the economic performance of these businesses. The categories considered in order to investigate age-based productivity are the different age groups. The idea is to find out if an above-average proportion of employees from a certain age group within a firm does or does not mean that the firm's apparent productivity is above average.

A firm's productivity depends on many factors (capital intensity, branch of activity, etc.), hence one of the difficulties will be making a distinction, among the productivity-determining factors, between the effect of the staff age structure and the impact of other factors.

The simple correlation between a firm's productivity and staff age structure does not go far enough. If, for example, the productivity of firms employing a lot of elderly employees is seen to be higher on average, does this mean that elderly wage earners are more productive? Or that there are more elderly employees in firms that are more productive, for other reasons? The other productivity-determining factors have to be controlled for in one way or another in order to be able to answer this question.

The differences amongst firms in the same country⁽¹⁾ are the result of several factors, including their start-up dates,

CHART 8 AVERAGE SCORE PER AGE ACCORDING TO EMPLOYMENT STATUS



Source : Mazzonna and Peracchi (2012), on the basis of SHARE data.

their human resources policies and various cyclical variations they have had to contend with owing to their line of business or location.

Some declining sectors are characterised by low productivity and a rather elderly workforce but this is mainly because they are old sectors rather than because of a technical decline in productivity owing to the workforce getting older. A firm incurring several negative shocks generally tends to recruit less people and indeed even to lay people off, thus automatically leading to an ageing of the on-site workforce, which will be more of a consequence than a cause of lower productivity.

To sum up, caution has to be exercised when selecting estimation methods, owing to the potentially endogenous nature of the breakdown by staff age, the age pyramid of a firm reflecting the history of its recruitments and dismissals since its inception.

3.2.1 Econometric research findings

The Cataldi, Kampelman and Rycx (2011) findings below were obtained on the basis of data similar to those used in the previous charts.

The table shows the estimations for three different specifications. For each one, an estimate is made of the productivity, measured according to the firm's value added divided by the number of hours worked and the average hourly wage, controlling for the characteristics of the staff (gender, level of education, type of contract, occupation) and the firm (branch of activity, size, availability of a firm-specific collective agreement).

In the context of the three specifications, the number of employees aged over 50 is seen to have an impact (negative sign) on a firm's aggregate productivity, whereas the proportion of young employees has no effect in the two cases relative to the reference age group, comprising 30-49 year-olds in this case. However, these productivity estimates remain precarious⁽¹⁾, as the impact is statistically significant only for two of the three specifications (fixed effects and dynamic model).

The wage-related estimations are unanimous: the average wage levels for employees are significantly less high for people aged under 30 and significantly higher for the over-50s than that of the reference category, suggesting that wages paid to younger employees are not actually as high as their productivity levels, whereas the opposite is true for the 50-and-above group.

Using different data, a recent study by Vandenberghe *et al.* (2012), reaches similar conclusions. To sum up, the above-average relative unit wage cost for those in the 50-and-above group puts them in a weak position within their firms.

3.2.2 Limits to the approach

The main limit to this approach is related to the robustness of the estimates and their ability to correct the biases owing to the potentially endogenous nature of the staff age structure.

(1) Moreover, the explanatory power of these models continues to be very low: the productivity of firms is very heterogeneous and variables available to researchers explain only a tiny percentage of these differences.

TABLE 2 ESTIMATION RESULTS ACCORDING TO THREE ECONOMETRIC METHODS⁽¹⁾
(for productivity and hourly wage)

Estimation method / specification	Fixed effects ⁽²⁾		GMM ⁽³⁾		Dynamic ⁽⁴⁾	
	Productivity	Wage	Productivity	Wage	Productivity	Wage
Share of employees						
Under 30	0.03 (0.04)	-0.15*** (0.02)	0.00 (0.10)	-0.16*** (0.04)	0.02 (0.04)	-0.13*** (0.02)
Over 50	-0.12** (0.05)	0.15*** (0.02)	-0.03 (0.14)	0.13*** (0.05)	-0.09** (0.05)	0.13*** (0.02)

Source: Rycx, Cataldi and Kampelmann (2011).

*** significant at 1%, ** significant at 5%, * significant at 10%, () standard deviations

(1) Both the model explaining productivity and the one explaining wages comprise other explanatory variables not featured in the table, such as capital, branch of activity, size of the firm, other staff characteristics (i.e. education, gender, type of contract.), etc.

(2) Individual effects (for each firm) are treated as parameters and eliminated by estimating the model in first differences.

(3) Generalised Method of Moments.

(4) Dynamic model: comprising a lagged dependent variable amongst the explanatory variables.

The Hellerstein approach highlights, for all firms and employees, average productivity and wage cost profiles rather than individual profiles. Consequently, even though the findings pointed to insignificant productivity/labour cost differences for the 50-and-above group (as in the case of studies about the Netherlands, for example), this gap could nonetheless create a problem for some categories of employees in this age group (the unskilled, for example) or for certain sub-groups of firms (such as those undergoing major technological changes).

Productivity and wage costs are estimated for individuals who have a job. A large percentage of the over-50s are inactive or unemployed. A selection (and/or self-selection) process may therefore have prompted these people to leave the labour market. Taking account of this process would probably result in a productivity estimate that is even less favourable for this age group.

4. Economic policy lessons

4.1 Macroeconomic options

Employees aged 50 and over, as a socio-professional group, share three characteristics: 1) the length of their remaining professional career is shorter; 2) compared with younger employees their human capital is comparatively more specific to their employer and/or their occupation; 3) their productivity is possibly on the decline, even though, as we have seen, there is a lot of discussion about this question.

The literature refers to the “end-of-game” effect and the “entitlement” effect.

The limited span of a professional career continues to be an incontrovertible fact, creating an “end of game” effect that has a negative impact on the labour demand for older employees. Employers are less prepared to offer an employment contract to an older person, because the costs of hiring and training the employee are not age-sensitive, whereas the return on investment is on average lower for an older employee (because that person will theoretically remain within the company for a shorter time). The legislative authority can do little about the recruitment costs. Applying further penalties for the dismissal of employees in the 50-and-above group is not a solution as the “end of game” issue remains, and, as the failure of the Delalande

contribution⁽¹⁾ in France has shown, is more inclined to imply less older people being recruited, insofar as older employees and the youngest ones are interchangeable.

Conversely, the legislative authority can try to reduce the differentiation of inter-age group dismissal costs that have a negative effect on recruitment *a priori*. In the Belgian situation, seniority’s significance for wages and, consequently compensation in lieu of notice, creates a significant differentiation in the age-specific dismissal costs.

In order to reduce the impact of the “end-of-game” effect, another option is to raise the statutory pension age, even though other determining factors are involved here. Any measures for actually extending the professional career, particularly as a result of tightening up the eligibility conditions for the early retirement provisions, by definition delays this “end-of-game” effect.

The “end-of-game” effect also explains why training efforts decline with the age of employees in all countries. Irrespective of age, training measures in Belgium are seen to be significantly lower than in the case of the country’s partners.

An older unemployed person has relatively fewer opportunities to find another job not only because of labour demand factors (“end-of-game” effect) but also because of supply effects. Consequently, older employees generally stay in their jobs for a long time and part of the experience built up is specific to their (former) employer. The gap between the reservation wage (the one the person would like to have) and what is on offer from employers is therefore wider for older employees. This situation is referred in terms of the “entitlement” effect.

The portion of earnings attributable to the career-related deferred payment incentive scheme has an impact on this discrepancy. Seniority-related wage developments undeniably reinforce this “entitlement” effect. This “insider” protection system works against older job-seekers.

The legislative authority may curb this “entitlement” effect by adjusting the poorly designed regulations. Consequently, in the case of the pension system (particularly in the public sector), the calculation of the pension by reference to the X final years of a career is a boon to older employees continuing to work, but it reinforces the “entitlement” effect as the job-seeker will be less inclined to accept a lower-paying job at the end of a career. Similarly, as unemployment benefits are based on the last wage earned, some job-seekers may be reluctant to take on a less-well-paid position, for fear of receiving lower benefits if they are laid off once more. This is why compensation

(1) Introduced in 1987, the Delalande contribution had to be made by any employer dismissing an employee aged over 50 who was also employed under an open-ended contract (outside the probation period). The proceeds of this special contribution were paid into the unemployment insurance system. The scheme was completely abolished in 2007.

paid by the community as a whole if job-seekers accept jobs that pay less than their previous ones, irrespective of their age, is an option for helping older employees back into work. This kind of scheme mainly benefits older job-seekers without discriminating against young people.

4.2 Company-level measures: training, experience management, working conditions, organisation of work

Firms are increasingly aware of the working population ageing issue and are starting to create structural measures seeking to curb the risk of age-related obsolescence of skills and work more effectively with an age-diverse workforce.

The employability of older employees is a responsibility shared between the company and the staff themselves. Vocational training is one way of tackling age-related obsolescence of skills but it is no silver bullet solution. Its effectiveness depends upon being directly related to the employee's "project", so that, for example, the person's skills can keep pace with the technological developments affecting the individual's occupation or the employee can prepare for a change of occupation.

Studies show that if these conditions are not available older people show comparatively little interest (Higher Council for Employment – 2012), and a frequently cited German study (Zwick and Göbel, 2013) demonstrates that training measures are no guarantee of longer job retention. The training delivery method also has to be age-appropriate and geared to people's initial training level. It is inadvisable to favour an "academic" format for poorly-educated people, even though this is still often the norm, owing to cost factors and for the sake of convenience. Similarly, focusing training measures on low-skilled people aged over 50 is too late for this qualification group (OECD, 2014).

There is obviously a lot of scope for progress to be made in this area by Belgium-based companies, as from an international perspective participation in vocational training continues to be low in the country, irrespective of the employee's age or initial level of training.

Ergonomic improvements to workplaces go a long way to offsetting the effects of age (senses-ageing – mainly sight and hearing –, working quickly, etc.), in order to ensure employees continue to do their present jobs in the best possible conditions.

Thought should be given to job mobility, having people switch to less physically-demanding occupations if appropriate. This requires forward-looking management of needs and skills by firms and effective cooperation between departments in charge of work organisation and training. Similarly, mentoring projects may help in the inter-age skills transference process.

Starting from 1 January 2013, any employer employing over 20 people is required to prepare an older workers employment plan covering all firm-specific measures designed to increase or maintain the pool of jobs for those in the 45-and-above group. This applies in particular to measures related to the factors discussed here: not only training, working conditions and organisation, but also skills validation and employee health.

Ergonomic improvements, changes of function and training support may be funded by the public authorities, subject to certain conditions, for example via the Occupational Experience Fund.

The number of employees aged 50 and over continues to be very low in Belgium. Admittedly, employers in all countries are reluctant to take on older employees but not only because of the costs. Employers are also concerned about how these people will fit in with the existing teams, particularly if the lines of command are populated by younger people. Even if age is not a neutral factor, blatantly discriminatory patterns of behaviour need to be penalised.

Labour demand for older employees is also penalised by corporate wage policies that continue to be based to a large extent on age and seniority criteria, particularly in the case of wage earners with clerical employee status. The wage-cost subsidy that is available, reduced contributions for the "older employees target group", applies to people in the 54-and-above group. The institutional agreement under the 6th State Reform provides for "target group" policies to be transferred to the Regions, hence it will be up to the regional authorities to decide on the advisability and effectiveness of such a scheme for reducing the wage bill for older employees and boosting their rate of employment.

In any event, representatives of employers and employees have a key role to play in bringing labour legislation up to date, and this continues to be a major area of work for the future.

Bibliography

- Aubert P. and B. Crépon (2003), "La productivité des salariés âgés : une tentative d'estimation", *Économie et Statistique*, 368.
- Cataldi A., S. Kampelmann and F. Rycx (2011), *Does It Pay to Be Productive? The Case of Age Groups*, DULBEA Working Papers, 11-10.RS.
- Conseil supérieur de l'emploi (2012), *Rapport 2012 : Pour un vieillissement actif*, Bruxelles.
- Hellerstein J., D. Neumark and K. Troske (1999), "Wages, Productivity, and Worker Characteristics: Evidence from Plant-Level Production Functions and Wage Equations", *Journal of Labor Economics*, 17(3).
- Mazzonna F. and F. Peracchi (2012), "Ageing, cognitive abilities and retirement", *European Economic Review*, 56(4).
- OCDE (2014), *Vieillesse et politiques de l'emploi : France 2014 : Mieux travailler avec l'âge*, mars.
- Saint-Paul G. (2009), *Does the Welfare State Make Older Workers Unemployable?*, CEPR Discussion Papers, 7490.
- SPF Emploi, Travail et Concertation sociale (2012), *Fonds de l'expérience professionnelle : Rapport annuel 2011*, Bruxelles.
- Vandenberghe V. (2011), "Boosting the Employment Rate of Older Men and Women", *De Economist*, 159(2).
- Vandenberghe V., F. Waltenberg and M. Rigo (2012), "Ageing and employability. Evidence from Belgian firm-level data", *Journal of Productivity Analysis*, 40 (1).
- Zwick T. and C. Göbel (2013), "Are personnel measures effective in increasing productivity of old workers?", *Labour Economics*, 22.