

## EMPLOYEES AND THEIR EARNINGS BASED ON THE STRUCTURE OF EARNINGS SURVEY

Mare Kusma

*This article provides a short overview of the deciles and the median of earnings. The number of employees in the private and public sector and the employees' gross hourly earnings in October 2008 and October 2010 have been compared by level of education and age.*

### Deciles and median

Statistics Estonia conducts the Structure of Earnings Survey since 2005. The survey was not conducted in 2009. Starting 2010 the survey is conducted every four years and the survey data reflect the number of employees and their earnings in the month of October by occupation, economic activity, sex, age, type of employment contract, full-time and part-time employment, and education. The published data on average gross hourly earnings do not include irregular bonuses and allowances.

Deciles divide the employees into ten equal groups. The first decile shows the value of earnings whereby 10% of employees earn less and 90% earn more. The fifth decile is also the median, meaning that half of the employees earn more and half earn less.

The median of earnings is usually smaller than average gross earnings. A difference between these indicates that there are employees with extremely high earnings. Tables 1 (p. 42) and 2 (p. 43) show that when average gross earnings increase or decrease, the median also increases or decreases.

In case of average gross monthly earnings, only those full-time employees are taken into account who worked the full month without any days off for sick leave or vacation. In 2005–2008 and in 2010, the median of average gross monthly earnings for full-time employees was respectively 19.4%, 18.3%, 16.8%, 14.3% and 16% lower than the average, and the ninth decile of monthly earnings was respectively 4.8, 4.7, 4.6, 4.3 and 4.4 times higher than the first decile.

In the same period (i.e. 2005–2008 and 2010) the median of gross hourly earnings for full-time and part-time employees was respectively 21.3%, 19.2%, 17.6%, 16% and 17.7% lower than the average, and the ninth decile of gross hourly earnings was respectively 4.7, 4.7, 4.5, 4.2 and 4.2 times higher than the first decile.

Throughout the period considered (i.e. since 2005), the proportion of the ninth decile to the first decile has not changed substantially: the ninth decile of earnings was approximately 4–5 times higher in case of both the gross monthly earnings of full-time employees and the gross hourly earnings of full-time and part-time employees. The ratio of the highest decile to the lowest decile represents the variability of earnings.

### Employees and earnings in the private sector

The private sector includes privately owned enterprises, non-profit associations and foundations, and sole proprietors. All these units combined had 413,376 employees in 2008 (Table 3, p. 43) and 338,310 employees in 2010 (Table 4, p. 44). After the crisis in the labour market in 2009, the number of employees decreased by 75,066 in 2010 (compared to 2008), i.e. by 18.2%. In percentage terms, the biggest decrease occurred in the number of employees without basic education (by 42.9% or 1,158 persons), followed by the number of employees with basic education (by 31.1% or 13,089 persons) and the number of employees with upper secondary vocational education (by 21.0% or 17,029 persons).

*If we consider the decrease in the number of employees by age group, the biggest decrease occurred among employees aged under 30 – 28.4% (i.e. 27,219 persons).*

*An analysis of average gross hourly earnings by age group and level of education reveals that 50–59-year-old doctorate holders had the highest gross hourly earnings in 2008, while in 2010 gross hourly earnings were the highest for 40–49-year-old doctorate holders (Table 5, p. 45; Table 6, p. 45). In both 2008 and 2010, gross hourly earnings were the smallest for employees aged 60+ without basic education.*

*Compared to 2008, the increase in the average gross hourly earnings of employees in the private sector as a whole was 3% in 2010. Based on age group, the biggest increase (6.4%) occurred in the hourly earnings of employees aged 40–49. Gross hourly earnings decreased only among employees aged under 30 (by 1.8%).*

*If hourly earnings are compared by level of education, the hourly earnings of employees with academic higher education increased the most (8.1%), while employees with a doctoral degree suffered the most (in relative terms) as their hourly earnings decreased by 5.5%.*

*A comparison of gross hourly earnings by two dimensions (age group and level of education) shows that among employees aged under 30 the hourly earnings increased only for the employees with academic higher education (2%), and decreased the most among the employees without basic education (12.2%). In the age group 30–39, hourly earnings increased the most among employees with a doctoral degree (20.8%) and decreased the most among employees with basic education (2.9%). In the age group 40–49, the hourly earnings of employees with academic higher education increased the most (15.2%). The biggest decrease (9.5%) in gross hourly earnings in this age group occurred among employees without basic education.*

*In the age groups 50–59 and 60+, the biggest increase in hourly earnings was registered for employees with professional higher education (7.2% and 10%, respectively) and the biggest decrease for employees with a doctoral degree (24.6% and 10.4%, respectively).*

## **Employees and earnings in the public sector**

*The public sector includes enterprises, non-profit associations and foundations in state or municipal ownership, and state and municipal institutions. All these units combined had 151,216 employees in 2008 (Table 7, p. 46) and 145,643 employees in 2010 (Table 8, p. 47). Thus, the number of employees in the public sector also decreased in 2010 compared to 2008 – by 5,573 employees, i.e. 3.7%.*

*In percentage terms, the number of employees without basic education decreased the most in the given period – by 31.1% (241 persons) – followed by the number of employees with basic education, which fell by 21.5% (1,544 persons). Based on age group, the biggest decrease occurred in the number of employees aged 40–49 – by 6.3%, i.e. 2,414 persons.*

*Analysing the average gross hourly earnings of public sector employees by age group and level of education, we can see that in both 2008 and 2010 the hourly earnings were the highest for employees aged 40–49 with a doctoral degree. The smallest average gross hourly earnings were registered for employees aged 60+ with basic education in 2008 (Table 9, p. 48), and for employees aged 60+ without basic education in 2010 (Table 10, p. 48).*

*Compared to 2008, the average gross hourly earnings of employees in the public sector as a whole increased 8.7% in 2010. If we compare the hourly earnings by age group, the biggest increase was registered among employees aged 60 and over (11.5%) and the smallest increase among employees aged under 30 (3.3%).*

*A comparison of hourly earnings by level of education shows that the biggest increase (15.9%) occurred in the hourly earnings of employees with a doctoral degree, and there was a decrease (6.1%) only in the hourly earnings of employees without basic education.*

Next, hourly earnings will be compared by two dimensions (age group and level of education). The biggest increase in hourly earnings in the age group 30 and under was registered for employees with post-secondary non-tertiary education (6.2%). The biggest decrease (4.3%) in this age group was registered for employees with basic education. In the age group 30–39, hourly earnings increased for most levels of education, but the increase was the biggest for employees with upper secondary general education and professional higher education (9.5%). In this age group, only employees with post-secondary non-tertiary education experienced a decrease (4.2%) in their hourly earnings. In the next age group (40–49), hourly earnings increased for employees with all levels of education. The increase was the biggest for employees with a doctoral degree (16.0%) and the smallest for employees with upper secondary general education (2.9%).

Hourly earnings also increased for most 50–59-year-olds – with the biggest increase (23.5%) registered among employees with a doctoral degree – and decreased only for employees without basic education (5.8%). In the age group 60 and over, most employees experienced an increase in hourly earnings. The increase was the biggest (20.2%) for employees with professional higher education. Hourly earnings decreased only among employees without basic education – by 1.9%.

### **Comparison of the private and public sector**

After the 2009 crisis, the number of employees with lower education decreased in both the private and the public sector, which means that the share of employees with higher education increased. In 2008 the share of employees with higher education (professional or academic higher education, and doctoral degree) was 25.6% in the private sector and 50.3% in the public sector – in 2010, the corresponding figures were 28.1% and 53.5%.

If we consider the distribution of employees by level of education (Figure 1, p. 49), the biggest changes in the private sector in 2010 (compared to 2008) took place among employees with basic education (their share decreased 1.6 percentage points) and employees with academic higher education (their share increased 1.7 percentage points). In the public sector, the biggest changes occurred among employees with upper secondary general education (their share decreased 2.2 percentage points) and employees with professional higher education (their share increased 2.6 percentage points).

An analysis by age group (Figure 2, p. 50) shows that in 2008 the share of employees aged 50 and over was 29.6% in the private sector and 41.7% in the public sector – in 2010, the corresponding figures were 31.4% and 42.6%. In the private sector, the number of employees aged under 30 decreased the most after the crisis; in the public sector, the biggest decrease took place in the number of 40–49-year-old employees. As a result, the share of employees aged 50 and over increased in both the private and the public sector.

In 2010, the biggest changes (compared to 2008) in the age distribution of private sector employees took place among employees aged under 30 (their share decreased 2.9 percentage points) and among employees aged 50–59 (their share increased 1.3 percentage points). In the public sector, the biggest changes in the age distribution of employees concerned 40–49-year-old employees (their share decreased 0.7 percentage points) and 50–59-year-old employees (their share increased by one percentage point).

If we compare the average gross hourly earnings of private and public sector employees by level of education, it appears that in 2008 the hourly earnings of employees with all levels of education were higher in the private sector. The situation was the same in 2010, and only the hourly earnings of employees with a doctoral degree were bigger in the public sector (Figure 3, p. 50).

If the hourly earnings in the private and public sector are compared by age group, the average hourly earnings in the private sector were higher than in the public sector only for 30–39-year-old employees in 2008. In 2010 the hourly earnings in all age groups were higher in the public sector (Figure 4, p. 51).

*Comparing the gross hourly earnings by two dimensions (age group and level of education) in 2008, the hourly earnings of employees aged under 30 in the private sector were higher than in the public sector – regardless of the level of education. In 2010 the hourly earnings of under-30-year-old employees with upper secondary vocational and post-secondary non-tertiary education in the private sector were lower than in the public sector.*

*In both 2008 and 2010, the hourly earnings of 30–39-year-old employees with all levels of education were higher in the private sector. In 2008, the hourly earnings of 40–49-year-old employees with all levels of education were also higher in the private sector. However, in 2010, the hourly earnings of 40–49-year-old employees with upper secondary vocational and post-secondary non-tertiary education in the private sector were lower than in the public sector.*

*The employees of younger age groups usually received bigger hourly earnings in the private sector, but the situation changes in higher age groups. In 2008, the hourly earnings of 50–59-year-old employees without basic education, with professional higher education or with academic higher education in the private sector were lower than in the public sector. In 2010, in the same age group, the hourly earnings of employees with post-secondary non-tertiary education, professional higher education or a doctoral degree were lower in the private sector. In the age group 60 and over, employees with professional or academic higher education or a doctoral degree had lower hourly earnings in the private sector, both in 2008 and 2010.*

## **Conclusion**

*In the years 2005–2008 and 2010, the median of the gross hourly earnings of full-time and part-time employees was 16 to 21% lower than the average. Since 2005, the proportion of the ninth decile to the first decile has not changed substantially.*

*In 2010, after the labour market crisis in 2009, the number of employees decreased in both the private and the public sector – by about 75,100 and 5,600, respectively (compared to 2008). In October 2010, 69.9% of employees worked in the private sector.*

*In relative terms, the decrease (in 2010, compared to 2008) was the smallest in the number of private and public sector employees without basic or with basic education. More than half of public sector employees and more than a fourth of private sector employees had higher education. Approximately one third of private sector employees were aged 50 and over – in the public sector, the share of this age group was more than one third.*

*The significant decrease in the number of employees influenced average gross hourly earnings and their changes. In the private sector, the gross hourly earnings of employees were higher than in the public sector in case of all levels of education, except for the employees with a doctoral degree in 2010. However, comparison by age group shows that the gross hourly earnings of private sector employees were lower than the earnings of public sector employees, except for 30–39-year-old employees in 2008. As a whole (weighted total), the average gross hourly earnings of private sector employees were slightly smaller than the hourly earnings of public sector employees, because in the public sector there were more employees with higher education and consequently with bigger earnings.*