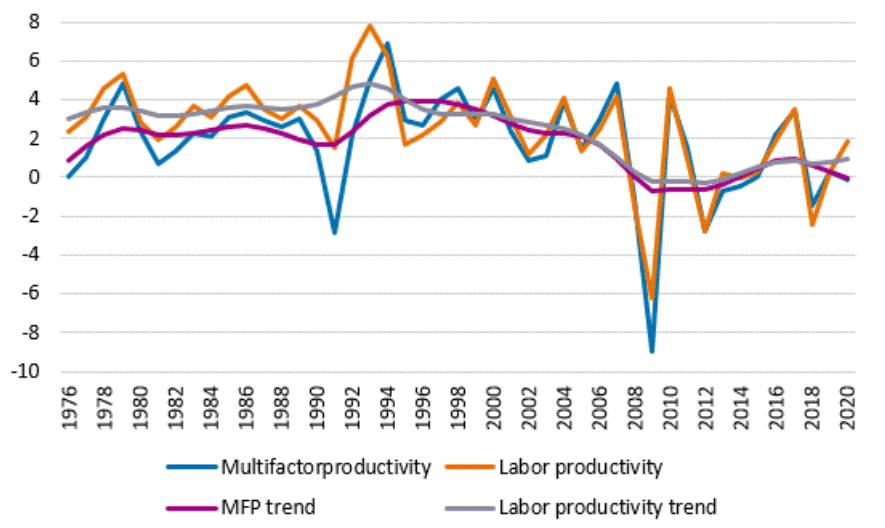
Productivity surveys 2020

Labour productivity grew in the corona year 2020

Labour productivity in the national economy grew by 1.8 per cent in 2020. The volume of value added fell by 2.0 per cent and hours worked by 3.9 per cent. For 2019 and 2020, data have been updated in accordance with the latest national accounts release. Unlike the national accounts, the productivity survey does not include non-market production or agriculture and forestry.

The contribution of capital intensity was 0.0 percentage points, the contribution of the quality of labour input was -0.2 percentage points and the contribution of multi-factor productivity -0.1 percentage points. Of the components of labour productivity, only the transfer of hours worked to more productive industries clearly had a positive effect on the development of labour productivity. The size of this effect was 2.1 percentage points.

Annual changes in multi-factor productivity and labour productivity and trend of development in 1976 to 2020, percentage points



Labour productivity is calculated as the volume change of value added per hour worked. It is also possible to separate which factors have had an effect on the change in productivity. The capital data of the national accounts are used to view what share of the change in productivity is caused by employees having more capital at their disposal than before. The contributions have been separately calculated for ICT and R&D assets, machinery and equipment, residential buildings and other capital resources. The total contribution

of capital intensity was 0.0 percentage points in 2020. The contribution of the structural change in labour input can also be calculated separately. This indicates that productivity grows because of the improved educational level of the labour force, for example. In 2020, it was -0.2 percentage points. The effect of multi-factor productivity or technical development is obtained when the total contributions of labour input and capital input are subtracted from the change in labour productivity. In 2020, the contribution of multi-factor productivity was also negative, -0.1 percentage points.

Alternatively, labour productivity can be calculated by dividing output by the number of hours worked. Then the effect of the change in the volume of intermediate consumption input on labour productivity can be separated into a specific factor. These data can also be found in Statistics Finland's database tables.

Further information about the calculation method of productivity surveys is available from the renewed methodological description.

The Hodrick-Prescott filtered long-term growth trend indicates that the pace of growth in labour productivity slowed down strongly in the whole national economy from good four per cent in the mid-1990s to the weakening trend in the 2010s (Figure 1). The declining trend in labour productivity in the 2010s turned positive after 2014. According to the preliminary data of productivity surveys, the trend of the latest years would continue the positive development.

Average growth rates of labour productivity and average contributions of its components in given periods

	1976-1989	1990-1999	2000-2009	2010-2020[1)]	1976-2020[1)]
Change in volume of gross value added, %	3.62	2.47	2.36	0.93	2.43
Change in hours worked, %	0.13	-1.30	0.75	0.18	-0.04
Growth of labor productivity, %	3.47	3.78	1.59	0.74	2.45
Contribution of reallocation of hours worked, % -units	0.27	0.31	-0.27	-0.11	0.07
Contribution of capital intensity, %-units	0.55	0.14	0.49	0.23	0.37
Contirbution of labor quality component, %-units	0.33	0.36	0.18	0.10	0.25
Contribution of multifactorproductivity, %-units	2.32	2.97	1.19	0.53	1.78

1) The figures concerning 2020 are based on preliminary data.

Table 1 examines the components of labour productivity in different decades. The values are the average growth rates for each decade. Labour productivity is calculated as the difference between change in volume and change in hours worked. On the other hand, examined on the level of the whole economy, the components of labour productivity are multi-factor productivity, change in the quality of labour input, capital intensity and reallocation of hours worked.

The statistics on productivity surveys have been published since 1976. Over the 1976 to 2020 period, labour productivity grew by 2.45 per cent, on average. In the same period, the contribution of capital intensity was 0.37 percentage points, on average, and the contribution of the quality of labour input was 0.25 percentage points. The biggest contributing factor in the development of labour productivity was multi-factor productivity, the average contribution of which was 1.78 percentage points. The productivity impact of the transfer of hours worked between industries was minor, only 0.07 percentage points. In the period in question, the growth in the volume of value added was, on average, larger than in the number of hours worked.

When examining periods of approximately ten years, it can be seen that labour productivity grew, on average, by over three per cent per year in 1976 to 1989 and 1990 to 1999 (3.47% and 3.78%, respectively). The volume of value added thus grew faster than the number of hours worked, which in some years even decreased. The quality of labour input also grew steadily. The contribution of capital input was highest during the first period. The contribution of multi-factor productivity was, on average, 2.32 percentage

points in the 1980s and as much as 2.97 percentage points in the 1990s, so it explained nearly one-half of the growth in labour productivity.

According to the theory of growth accounting, multi-factor productivity means technology development. In reality, it may also include such effects that are otherwise not detected in the model (e.g. measurement errors and externalities). Multi-factor productivity is a significant contributor to the growth of labour productivity. This is due to the falling marginal productivity of capital and labour and natural constraints. For example, getting a computer into use can increase an employee's productivity significantly, but the second and third computers no longer have the same effect. Labour input, or the number of hours worked per employee, cannot grow unlimited either. In contrast, labour productivity can, precisely thanks to technical progress.

The recession in the 1990s was visible as an increase in labour productivity, as the number of hours worked contracted more than value added. Indeed, the average growth in labour productivity in the whole 1990s was of the same size as in the 1980s. In the 1990s, the average growth in value added was only good two per cent per year, compared to good three per cent in the 1980s. At the same time, the number of hours worked decreased by an average of one per cent per year, so labour productivity grew by 3.78 per cent. The contribution of the quality of labour input in the 1990s is highest ever. This development indicates that the educational level of the labour force improved every year. In the 1990s, the contribution of capital input was low, only 0.14 percentage oints per year, on average, but included were years of both positive and negative contributions. By contrast, the contribution of multi-factor productivity was high, on average, nearly three per cent over the whole decade, thus explaining alone the majority of the growth in labour productivity.

At the turn of the 2000s, growth in labour productivity slowed down clearly. During the 2000 to 2009 period, the average annual growth in value added was, however, clearly higher than the annual change in hours worked. However, compared to the 1990s, the average annual growth in labour productivity halved to 1.59 per cent. The main reason for the slowdown of the growth in labour productivity was that the growth in multi-factor productivity slowed down. The contribution of multi-factor productivity during the period in question was 1.18 percentage points. The contribution of the quality of labour input also halved, but its effect was minor. By contrast, the contribution of capital input improved from the previous period. It is also noteworthy that the early 2000s is the first period when the labour force has moved from high-productivity sectors to low-productivity ones. This is visible as the negative contribution of reallocation of working hours, -0.27 percentage points. In the following period 2010 to 2020, more labour force has also transferred to industries with lower productivity.

In 2010 to 2020, labour productivity growth contracted further, being 0.74 per cent per year, on average. Although the change in the volume of value added was positive in 2010 to 2020, in relative terms its growth was slower than that of hours worked, which is visible as the growth in labour productivity slowing down. All components contributing to labour productivity contracted significantly from the previous period. Average growth rates for the period 2010 to 2020 and with all indicators below the average for the whole period 1976 to 2020.

Contents

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