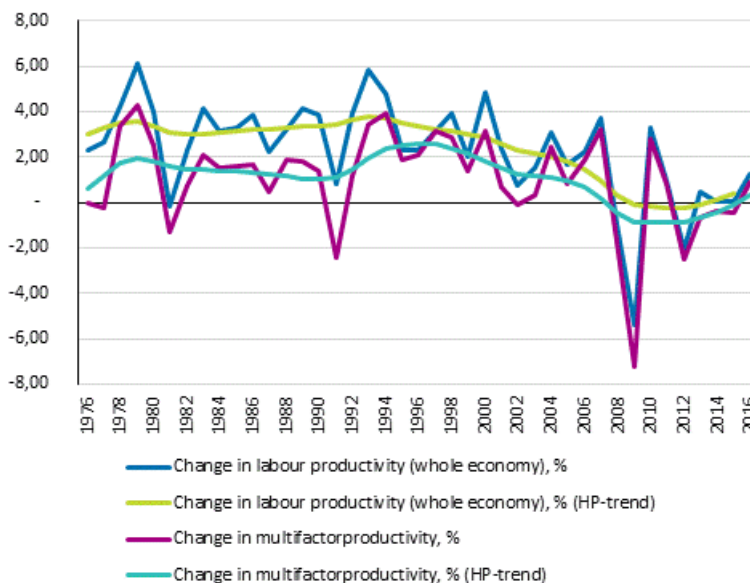


Productivity surveys 2016

Labour productivity grew by 1.2 per cent in 2016

Based on preliminary national accounts data on the volume of value added, the growth rate of labour productivity in the whole national economy was 1.2 per cent in 2016. After three years of decline and one year of zero growth, the change in the volume of value added turned positive again in 2016, being 1.6 per cent. When the number of hours worked at the same time grew by only 0.4 per cent, more value added was achieved in one hour worked than before.

Productivity at the whole economy level 1976 - 2016 *, %



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 growth or decrease of productivity. The capital data of 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 0.3 per cent in 2016. 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 2016, it was -0.02 per cent. The multi-factor productivity is derived when the contributions of structural change in labour input and capital input are

deducted from the change in labour productivity. In 2016, the change in multifactor productivity stood at 0.9 per cent.

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 product 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 concepts and definitions is available under Concepts and definitions (http://www.tilastokeskus.fi/til/ttut/kas_en.html).

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 three per cent in the mid-1990s to 0.3 per cent in 2015 (Figure 1). On account of a small growth in 2016, the declining trend of labour productivity after the mid-1990s has turned more positive.

The drop in labour productivity after the mid-1990s has been affected in particular by the steep decline in multi-factor productivity. The average annual growth in multi-factor productivity was around 1.4 per cent in 1976 to 1990. In the first half of the 1990s, multi-factor productivity grew clearly and was at its highest at over 3.9 per cent in the mid-1990s. After 2000, the growth trend of multi-factor productivity has made a clear downturn. The average growth rate of multi-factor productivity in 2000 to 2007 was still 1.6 per cent but the average annual change has been -0.9 per cent in 2008 to 2016.

The contribution of labour composition to value added growth was strongest during the first half of the 1990s, on average, 0.7 percentage points per year in 1990 to 1994. After this, it has had little effect, 0.1 percentage points, on average, over the period 1995 to 2016. The effect of capital intensity has been clearly positive. During 1995 to 1999, the effect of capital intensity was still zero, on average, while in the 2000s the average contribution has been 0.7 percentage points.

The effect of the contribution of capital input to value added growth was, on average, 1.2 percentage points per year in 1976 to 1990. In the 1990s, the effect decreased to an average of around 0.6 percentage points per year. In 2000 to 2007, the average contribution of capital input was 1.0 per cent, and in 2008 to 2015, the average contribution was 0.5 per cent, which corresponds to the average annual change of the 1990s.

The contribution of hours worked on the change in value added fell heavily during the recession in the 1990s. In 1991 to 1994, the average annual change was -3.6 percentage points. In 1995 to 2007, the average annual change in hours worked was 0.9 percentage points. During 2008 to 2016, the average annual change in hours worked again turned negative to -0.3 percentage points.

Table 1 shows the average annual growth percentages of total productivity and labour productivity in different time periods. In addition, the table shows capital input, hours worked and labour composition contributions to value added growth, as well as capital intensity change and labour composition change contributions to labour productivity growth.

Average growths of productivity in the whole national economy, 1976 to 2016*

	1976-1989	1990-1994	1995-1999	2000-2007	2008-2016	2016 ¹⁾
Value added volume, change, %	3,4	-0,7	4,7	3,4	-0,6	1,6
Contribution of total capital input, %	1,2	0,3	0,8	1,1	0,5	0,4
Contribution of hours worked, %	0,4	-3,1	1,5	0,6	-0,3	0,3
Contribution of labour composition, %	0,3	0,7	0,1	0,2	0,1	0,0
Contribution of Multifactor productivity, %	1,4	1,5	2,3	1,5	-0,9	0,9
Contribution of Total capital intensity, %	1,0	1,3	0,0	0,7	0,7	0,3
Change of labour productivity (aggregated via industries), %	2,8	3,5	2,4	2,4	-0,1	1,2
Contribution of Labour reallocation, %	0,5	0,3	0,3	0,1	-0,1	0,0
Change of labour productivity (whole economy), %	3,2	3,8	2,7	2,5	-0,3	1,2

1) The figures concerning 2015 and 2016 are based on preliminary data.

The productivity indicators presented in these statistics are based on the KLEMS method and on the same data as EUKLEMS. Further information can be found in the methodological description of the statistics.

Contents

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Source: Productivity surveys 2016, Statistics Finland.