Wage-price spiral in Hungary

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1. Introduction

In Hungary, consumer prices rose by 24.5% in December 2022, a rate that had not been seen in the country for the last 26 years. In addition, nominal wage growth in the private sector was in double digits in every month in 2022. This raises the question as to what happens if these processes become self-reinforcing. Usually, the first reading is that this can lead to a wage-price spiral, meaning that high inflation nourishes high wage dynamics, which fuels even higher inflation. However, there are many other factors that should be taken into consideration when analysing wage and price growth. This study presents an examination of the recent wage and price dynamics in Hungary.

Both high wage growth and inflation are present in Hungary, but this does not mean that a wage-price spiral has emerged. According to our findings, high wage growth has started to be reflected in prices, but inflation has not really been reflected in wages yet. The first statement is supported by the strengthening relationship of the wage-price pass-through, which suggests that the role of wage growth in the development of inflation has increased. The second statement can be supported by the fact that the wage Phillips curve seems to show a stable relationship, as it has not changed substantially over recent years.

There have been a lot of different factors contributing to high wage and price growth in Hungary. High wage dynamics can mainly be explained by labour market tightness and minimum wage increases. In addition, some workers have upgraded from low-productivity companies to high-productivity companies where they receive higher wages, meaning that the high wage growth is partly due to a compounding effect which does not, per se, cause inflationary pressure on the supply side. At the same time, according to various surveys, only between 30 and 40% of companies were planning to implement additional wage increases due to rising inflation, which confirms that inflation has not been the main reason for rising wages. Inflation had been high because of the external environment and extreme circumstances, however domestic factors are now increasingly contributing to price dynamics. One country-specific factor that contributes to the high inflation through rapid increases of food prices, is the poor productivity of the food industry in Hungary. Moreover, the acceleration of price growth does not only reflect higher costs as there have been significant rises in profits.

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2. The framework of a wage-price spiral in advanced economies

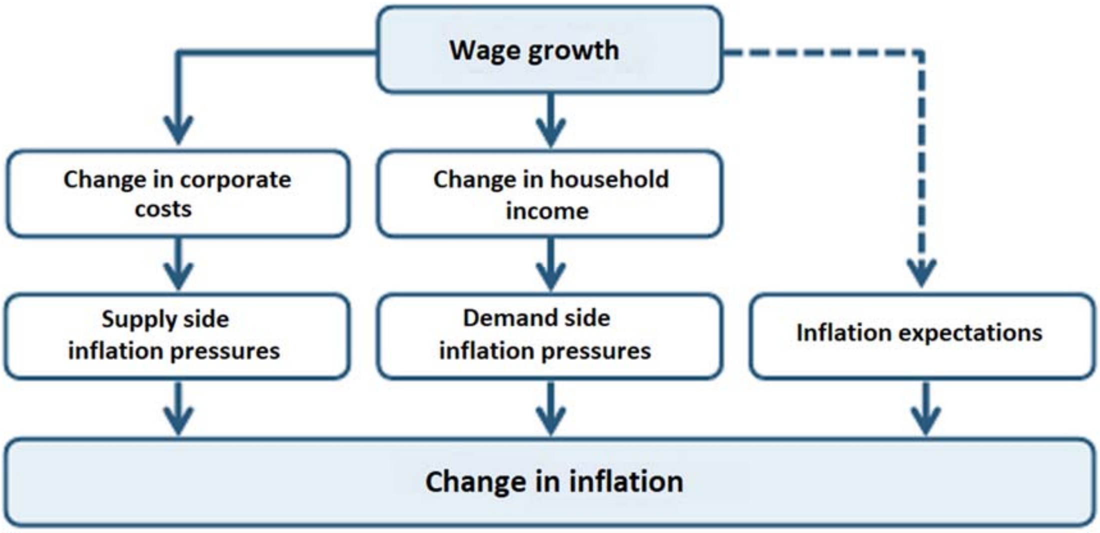
Wages play an important role in pricing processes, primarily through three channels. They can influence nominal processes from the supply and demand sides and also through inflation expectations (Graph 1). From the demand side, persistently high wage dynamics represent the greatest inflation risk, if the extra income is used for household consumption. Because of the non-linearities, the cyclical position of the economy determines the effect of the consumption on inflation dynamics. At the same time, raising wages increases corporate costs, which companies can incorporate into the prices of their products, transferring these costs to the customers. This creates a supply side inflation pressure, but only if wage growth exceeds productivity. If wages rise at the same rate as productivity, companies will not have to raise their prices as their profits will cover the wage costs.

Although there has been much debate in recent years about whether wages are primarily determined by productivity, the link between productivity and wages continues to be strong. Stansbury and Summers (2017) conclude that productivity growth still matters substantially for wage growth. Strain (2019) adds that worker productivity should be the baseline from which wages are determined.

From the point of view of a wage-price spiral, inflation expectations have the greatest role. Expectations can influence the changes in inflation by affecting wage negotiations. When prices rise, employees strive to achieve a higher nominal wage during the negotiations, in line with the higher expected inflation. The incorporation of inflation risks into the expectations of the public may result in permanently higher price dynamics.

A wage-price spiral develops when wage and price growth become self-reinforcing. When workers expect higher inflation in the future, they negotiate for higher wages as they want a real wage increase (or at least to sustain its level). On the one hand, it heats up the demand side of the market, and on the other hand forces the employer to raise prices to compensate for the increased costs. When this creates a cycle, it sustains inflationary pressures.

The effect of wage growth on inflation Graph 1



Source: MNB

Examining the relationship between labour market variables and inflation was put into focus with the creation of the theory of the Phillips curve. The Phillips curve shows the correlation between the cyclical position of the economy and inflation. Originally, it depicted a negative correlation between wage inflation and the unemployment rate, according to the findings of Phillips (1958). Following that, Samuelson and Solow (1960) found a similar, negative correlation between unemployment and price increases. Keynesian economists of that time welcomed these findings enthusiastically, as they provided an explanation for an important missing link in Keynesian theory regarding inflation prior to achieving full employment.

In the 1960s and 1970s, many economists thought that inflation was a constant threat once wages started to rise. Economists argued that when households demand higher wages because of high expected inflation, businesses will be forced to pass on the cost of higher wages, which will create a second round of rising prices. This concept is based on a theory rather than empirical evidence. It stems from an era in which a large number of workers were working in state-owned industries, and unions had more power than they have today (Inman (2022)). As inflation was thought to be the result of a wage-price spiral in the late 1960s, wages and prices were frozen to control inflation in 1970 by President Nixon in the United States. However, the measure was not proven to be effective, the price controls did not work.

Recently, there have been several research studies investigating the possibility of a wage-price spiral. Boissay et al (2022) found that there is limited evidence that most advanced economies are entering such a spiral. They state that the current environment does not support the formation of such a spiral. The correlation between wage growth and inflation has declined over the last decades and is currently near historical lows. Another reason is that workers' collective bargaining power has declined in recent decades. They add however, that this correlation has strengthened recently.

In their recent study Bluedorn et al (2022) found that the risks of a wage-price spiral in advanced economies are limited. The authors identified 22 intervals over the past 50 years, that had similar characteristics to those present in 2021. During the selected time spans, price inflation was rising, wage growth was positive, but real wages and the unemployment rate were flat or falling. They concluded that these episodes did not lead to wage-price spirals on average. Instead, inflation finally fell in subsequent quarters and nominal wages gradually rose, helping real wages recover. They mention three factors that contain the risks. The first is that the underlying shocks to inflation come from outside the labour market. The second is that when inflation outstrips nominal wage growth, real wages turn negative and falling real wages help to reduce price pressures as aggregate demand slows down. Finally, recent tightening actions by central banks will help to prevent a permanently high inflation environment.

Alvarez et al (2022) conclude that sustained wage-price acceleration is hard to find when examining episodes similar to the situation of today. For their examination, they create a database of past wage-price spirals in advanced economies going back to the 1960s. It was found that only a small minority of the episodes of accelerating prices and rising nominal wages were followed by a sustained acceleration in wages and prices. Usually, inflation and nominal wage growth tended to stabilise, leaving real wage growth broadly unchanged. They add that a decomposition of wage dynamics suggests that nominal wage growth stabilises at levels that are consistent with observed inflation and labour market tightness. Their final statement is that an acceleration of nominal wages should not necessarily be seen as a sign of an emerging wage-price spiral.

Boissay et al (2022), however, point to some factors that may increase the likelihood of a wage-price spiral. First, firms' pricing power has increased to historical highs. The pricing power is measured by the markup of prices over costs. In the current high inflation environment, higher markups could fuel inflation as businesses pay more attention to aggregate price growth and incorporate it into their pricing decisions.

3. The reasons for high wage growth and inflation in Hungary

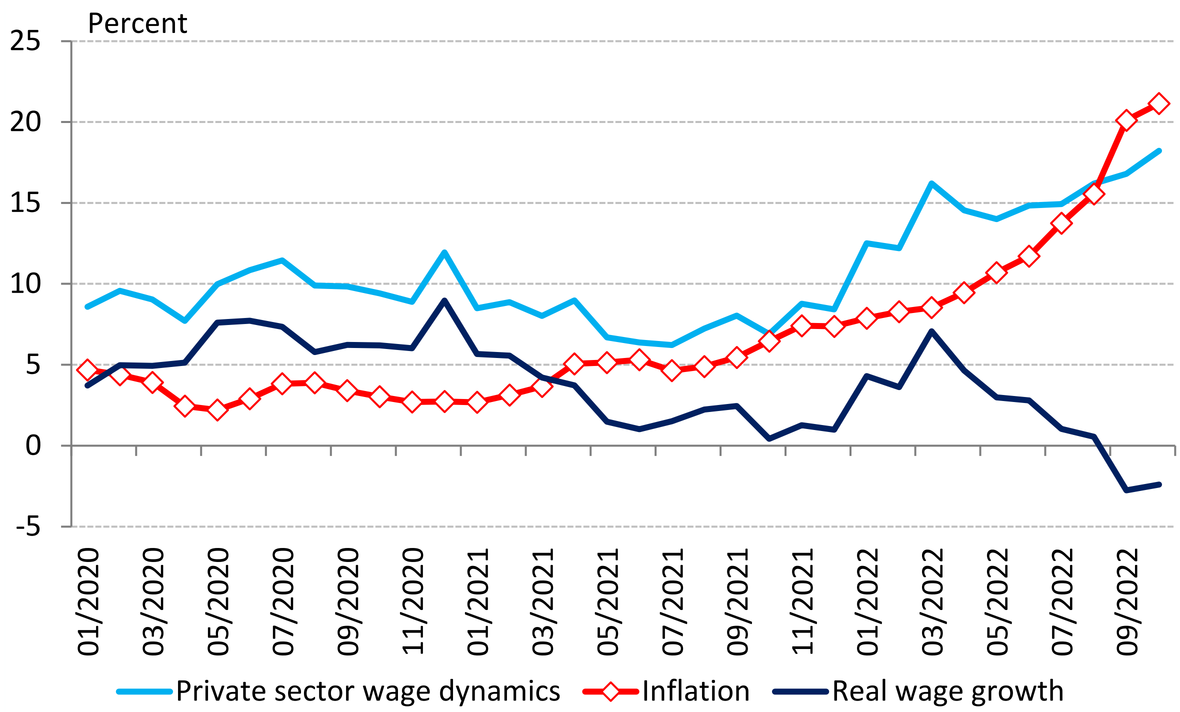
Both high wage growth and inflation are present in Hungary, but this does not mean that a wage-price spiral has emerged. The processes need to be analysed more closely to reach a conclusion about whether a wage-price spiral exists in the economy or not. Inflation has been rising since the spring of 2021 in Hungary, and this is a consequence of many factors. With the post-pandemic restarting of economies, raw material and food prices have jumped at an international level. The supply bottlenecks and the effects of the Russia-Ukraine conflict have also had a huge impact on domestic price pressure. Inflation has been double digit since May 2022 and reached more than 20% on a yearly basis since September (Graph 2).

Prices rose by 24.5% in December on a yearly basis which was the highest reading amongst EU countries. Food and household energy price indices increased significantly. High energy prices affect prices through various channels, a drought in Europe and geopolitical tensions continue to exert pressure on consumer prices.

Inflation had been high primarily because of the external environment and extreme circumstances, but now domestic factors increasingly contribute to price dynamics. According to our calculation, compared with the period of price stability, i.e., during the period 2017–19, 80% of the increase in inflation in 2021 was caused by external factors (MNB (2021)). However, domestic factors have played a more significant part in the acceleration of inflation recently. On the one hand, the poor productivity of the food industry in Hungary has caused prices to increase. On the other hand, the acceleration of price growth does not only reflect higher costs as there has also been a significant rise in profits (see Chapter 3.4). The increase in corporate profits can be observed in a wide range of sectors, thus the high repricing is supported not only by cost side pressures but also by rising profit rates.

Wage and price dynamics in Hungary

Graph 2



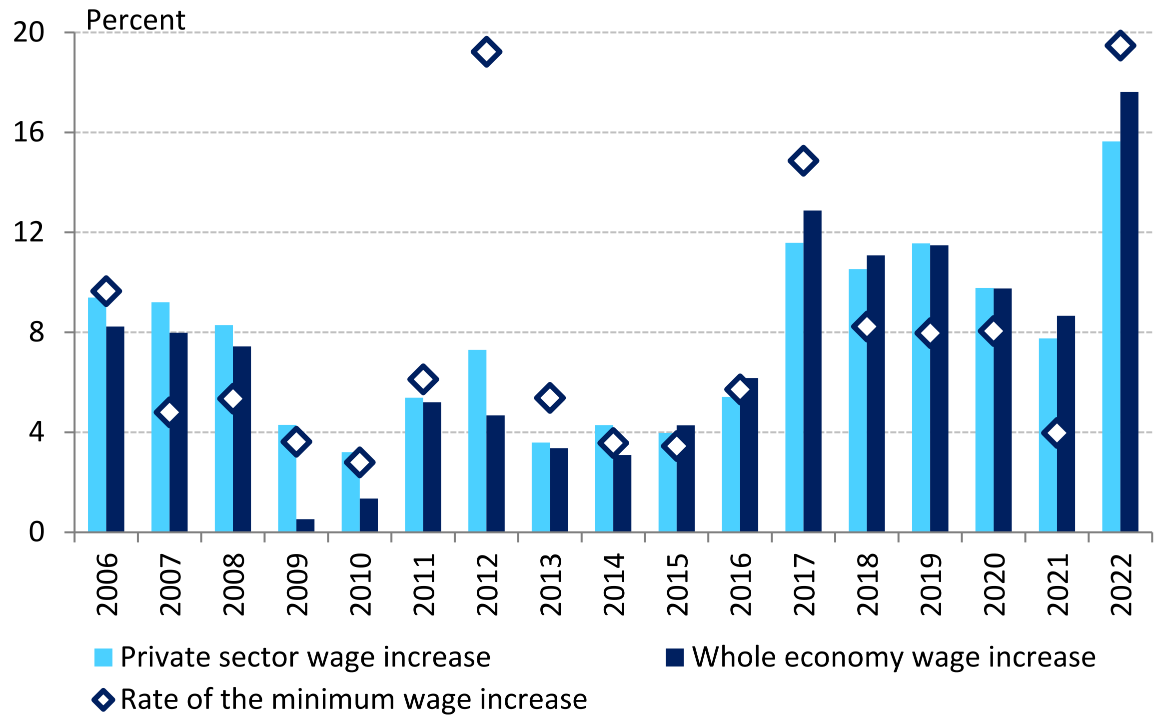
Source: HSCO

Private sector wage dynamics were historically high in the past years in Hungary, which is partly due to the minimum wage and guaranteed minimum wage increases. A six-year wage agreement was signed in 2016, which included a 15% minimum wage rise in 2017 and an 8% minimum wage rise in 2018. After that, increases in administrative wages were decided on a yearly basis. The major rise in these wages is perceived in the higher earnings categories as well, since this is the only way that employers can maintain the differences in wages between jobs that require various skills and experience. As a result of this, private sector wage growth has been double digit since 2017, except for 2021 due to the pandemic (Graph 3).

The supply-side inflationary effect of administrative wage increases was offset by a reduction in corporate contributions throughout the years. Raising the minimum wage and the guaranteed minimum wage adds to companies' costs, which they could incorporate into the prices of their products and services. However, employers' taxes and contributions were significantly reduced to compensate them for the higher wage costs. Between 2017 and 2022, the social security contribution declined in four steps, by between 2 and 2.5 percentage points in each step so that the inflationary effect from the cost side remained moderate.

Rate of minimum wage and private sector wage increase

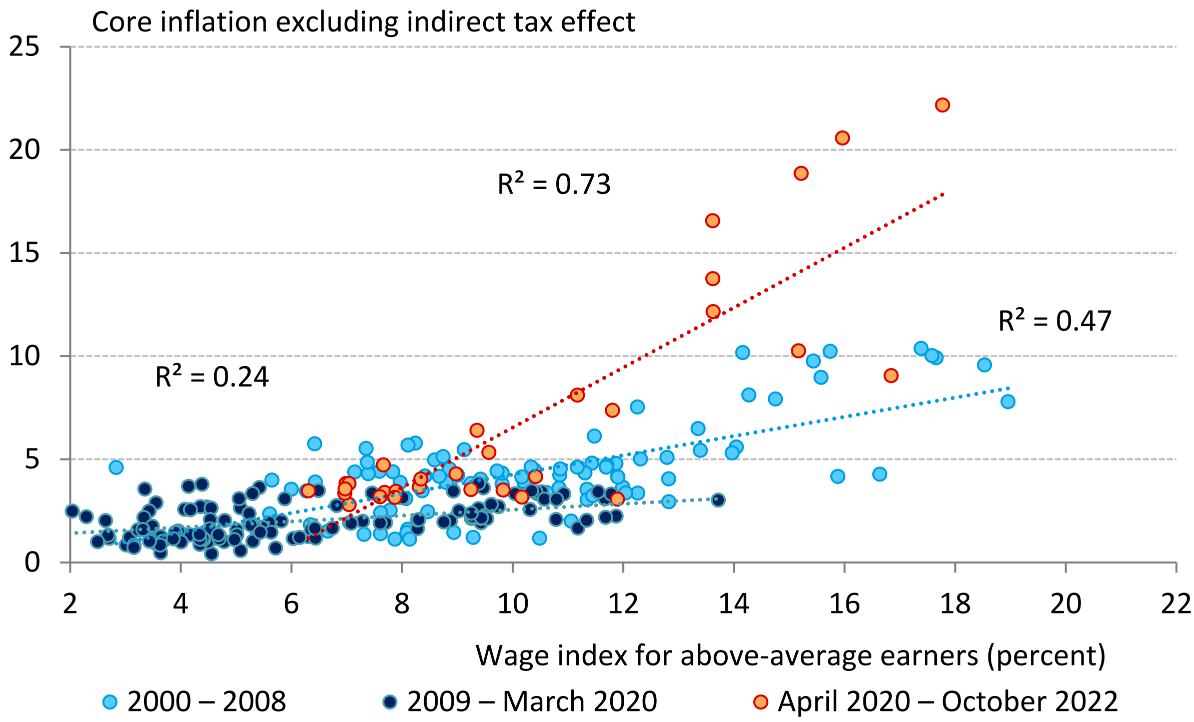
Graph 3



Source: HSCO

The wage-price pass-through has strengthened in recent years, which means that high wage growth has started to be reflected in inflation. If we examine the relationship between wage growth and inflation, we can see that although it had flattened in the last decade, it has now become steeper again (Graph 4). Before the crisis in 2008, there was a close relationship between the two variables, however, after the crisis, the relationship has weakened. In recent years, wage dynamics and inflation have started to move closely together again and the role of wage growth in the development of inflation has increased.

Relationship between core inflation and wage dynamics between 2000 and 2022 Graph 4



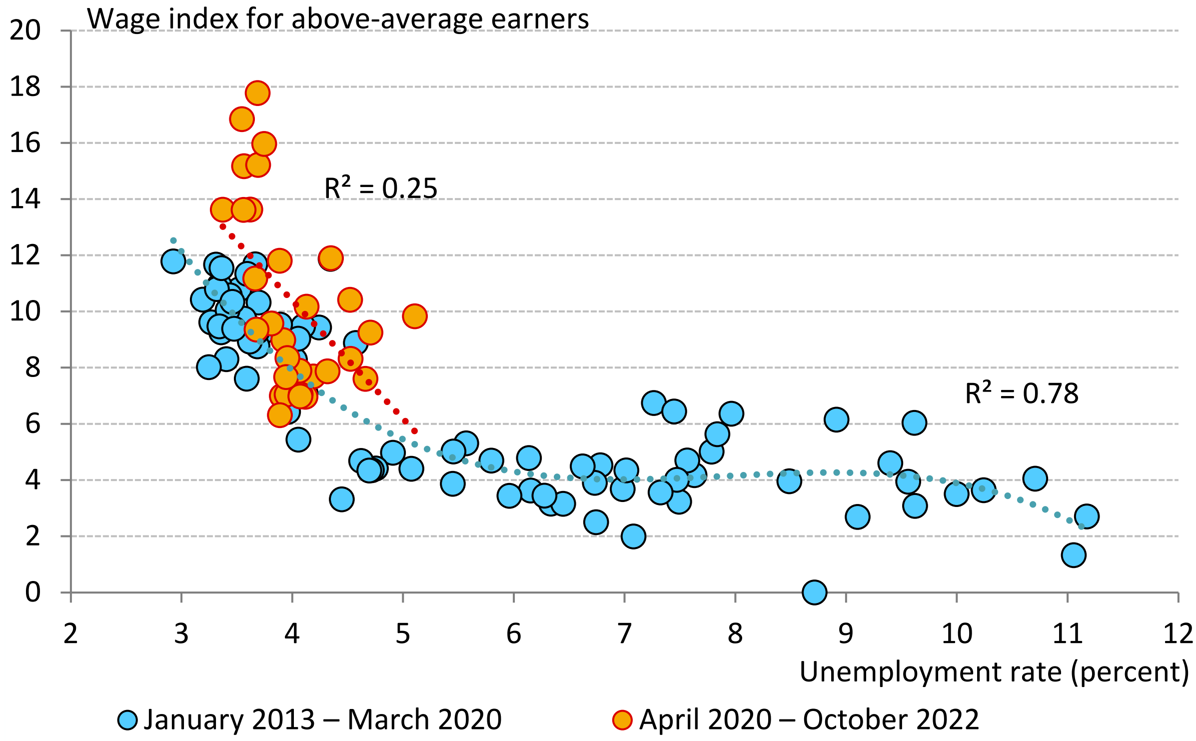
Sources: HCSO; MNB-calculation

The Phillips curve in Hungary shifted upwards and became steeper, indicating a non-linear, state-dependent relationship between the economic cycle and inflation. The labour market may have contributed to the price-determining Phillips curve becoming steeper through two channels: via a change in the relationship between unemployment and wage increases (in the change in the wage Phillips curve) or via a strengthening of relations between wages and inflation. We have not found convincing evidence for the former, whereas the latter assumption plays an important role in the Phillips curve becoming steeper.

The wage Phillips curve seems to be a more stable relationship than the price Phillips curve, which suggests that inflation has not been the main reason for raising wages. In the current labour market situation, low unemployment – and the tight labour market that comes with it – improves employees' bargaining position during wage negotiations. Administrative measures affect wage dynamic considerably; therefore, in order to obtain a clearer picture of the underlying wage-setting trends, our calculation is based on the wage index of those who earn above the average (Graph 5). As the data show, the regression lines do not differ much between the two examined periods. This means that there is no new, strong relationship between the two variables. This is also important because we can only speak about a wage-price spiral when positive feedback between the two Phillips curves occurs – this cannot be detected in Hungary at present.

Relationship between wage dynamics and unemployment rate between 2013 and 2022

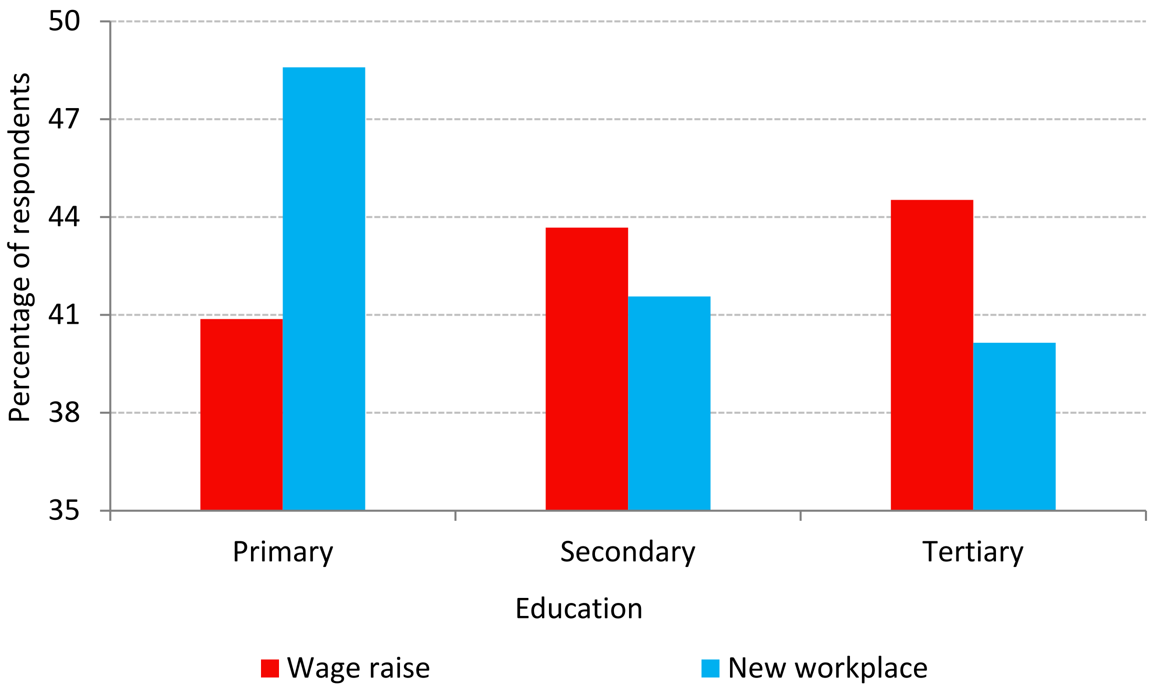
Graph 5



Sources: HCSO; MNB-calculation

To protect against the effects of high inflation, employees behave differently based on their levels of education. According to an MNB survey, while most of the low-skilled workers seek to increase their wages by changing workplaces, while mid- and highly-skilled workers tend to make wage demands at their current workplaces (Graph 6). The flow of low-skilled workers to jobs with somewhat higher wages raises the overall productivity of the corporate sector through the compound effect. While this may increase the aggregate demand in the economy, it does not cause wage inflation on the supply side, as productivity increases proportionally with wages.

Planned labour market reactions to protect against the effects of inflation Graph 6



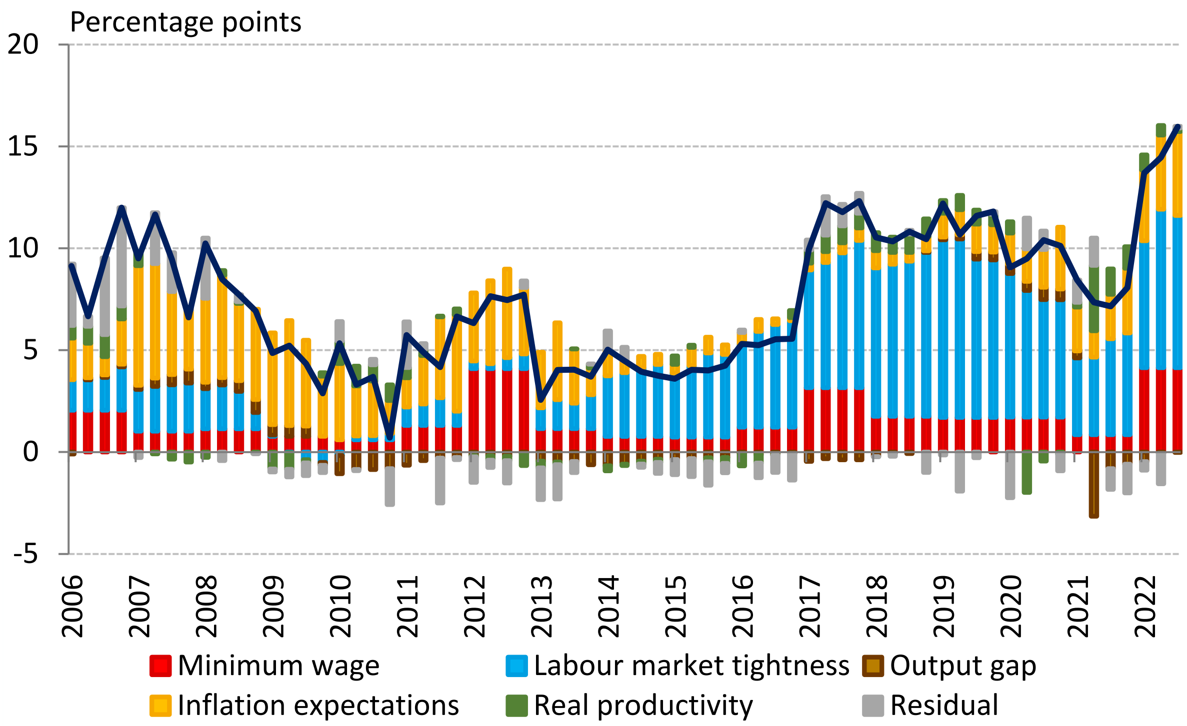
Source: MNB survey

3.1 Labour market tightness

Wage dynamics in 2022 can be explained to a great extent by the historically tight labour market. After 2013, the degree of labour market tightness mainly determined the development of the annual change in average earnings in the private sector, while earlier inflation expectations had the greatest explanatory power (Graph 7). The tightness of the labour market explained almost 8% of private sector wage dynamics in the third quarter of 2022. In addition to these factors, accelerating wage dynamics in recent quarters were boosted to a lesser extent by higher inflation expectations.

The decomposition of the annual private sector wage dynamics

Graph 7

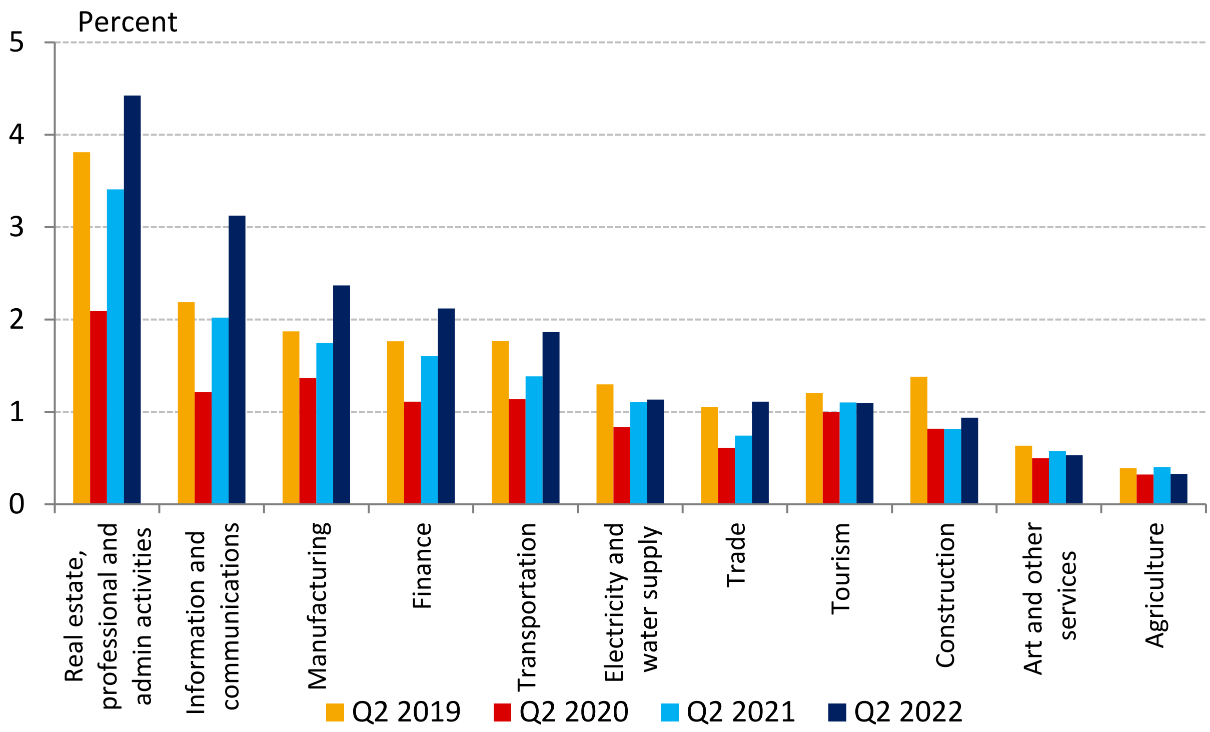


Source: MNB-calculation

Labour demand remains strong in Hungary, facing supply constraints in some sectors. Overall employment has reached a historically high level, while labour market tightness is above the pre-pandemic level. Sectoral tightness is significant in some service sectors and there were already labour bottlenecks in the second quarter of 2022 in the information and communications, finance and real estate sectors, as well as in other professional services sectors (Graph 8).

Ratio of vacancies to the number of employees in the private sector

Graph 8



Source: HSCO

Wage development at companies has become increasingly important to retaining workforces. In the current historically tight labour market, companies have to compete to retain workers and fill vacancies. Therefore, workers' wage bargaining position continuously improves, which leads to robust wage growth. As a consequence of the declining free labour capacities, underlying wage developments remain strong.

3.2 Minimum wage and guaranteed minimum wage increases

In addition to the rise in the underlying trends of wages, the minimum wage and the guaranteed minimum wage increase contributed significantly to wage growth in the private sector. The guaranteed minimum wage applies to those with at least a secondary education. In 2022, the minimum wage was increased by 19.5% and the guaranteed minimum wage by 18.5%, the former being the highest, the latter being the second highest increase in the last 15 years. According to our calculations, the proportion of those employed on the minimum wage today is approximately 8% and the proportion of those earning the expected minimum wage is approximately 12%, so every fifth employee will be directly affected by the measure. It means that the wage increase directly affects more than one million employees, while via wage compression it may exert an effect up to the level of gross average earnings, thus influencing the wages of 2.5 million employees in total (somewhat more than half of the total of 4.6–4.7 million employees).

The cost side inflation effect was offset by reductions in the corporate tax burden. In 2022, company contributions were reduced by 4 percentage points (social contribution tax by 2.5 percentage points and vocational training contribution by 1.5 percentage points), the small business tax was decreased to 10%, and the local business tax allowance has been extended until 2022. These measures offset the increase in wage costs resulting from the higher minimum wage. Accordingly, no significant inflationary effects were expected through the supply side channel.

3.3 Mid-year wage increases

One of the early signs of a wage-price spiral is non-seasonal wage increases due to high inflation expectations. Mid-year wage increases were not typical for most companies in Hungary this year. A survey conducted by the MNB shows that only a quarter of companies were planning to implement additional wage rises due to rising inflation in August, the number of these companies increased to 31.6% in October. According to Randstad's September 2022 compensation and benefits survey, 38% of the companies offered at least two salary increases this year. According to a joint survey conducted by the Publicus Institute (2022) and Népszava at the end of August, 25% of employees can expect a wage increase during the year due to inflation.

The reason for mid-year wage increases is not necessarily high inflation. The degree of wage development at companies shows that employers want to retain their employees and increasingly focus on retention instead of recruitment (Profession (2022)). This means that they will increase the salaries of workers, even during the year if necessary, due to labour shortages. On the other hand, fluctuation has become more common in Hungary and employees expect a high starting salary when they join a new company, which is often higher than other employees who have been working there for some time.

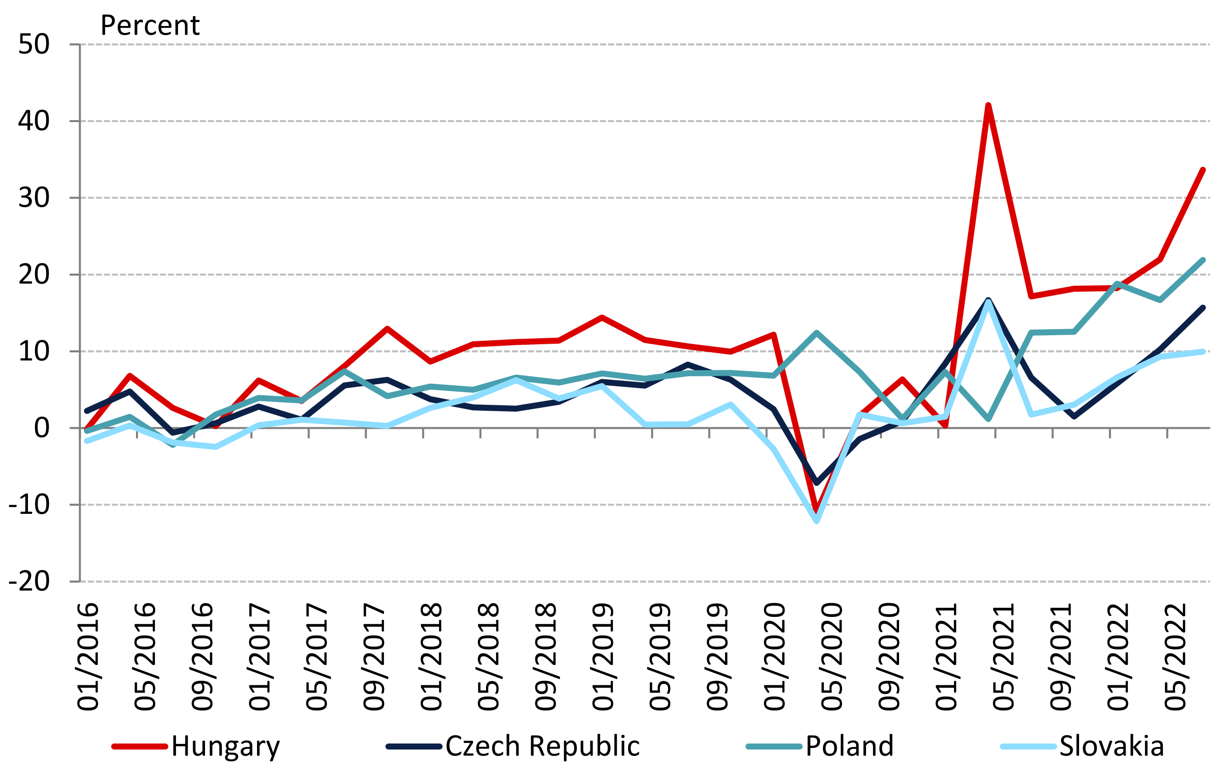
To conclude, wages are driven by the present labour market conditions, which have increased the importance of retaining the workforce. There is huge competition for labour and employers do not want to let go of prized employees. This is in accordance with the fact that an increasing number of companies are reacting to the inflationary situation by offering increases in salaries on their own initiative, and not due to external influence, preventing fluctuation.

3.4 High profit growth

In the third quarter of 2022, corporate profits increased notably in Hungary, the highest among EU countries (Graph 9) and this weighs against the presence of a price-wage spiral. The outstanding increase in profits may be due to the overpricing of products, as companies tend to increase their markups in addition to passing through commodity price increases to final consumer prices. Therefore, dynamic wage growth did not cause a deterioration in profitability.

The change in gross operating surplus and mixed income in the region

Graph 9

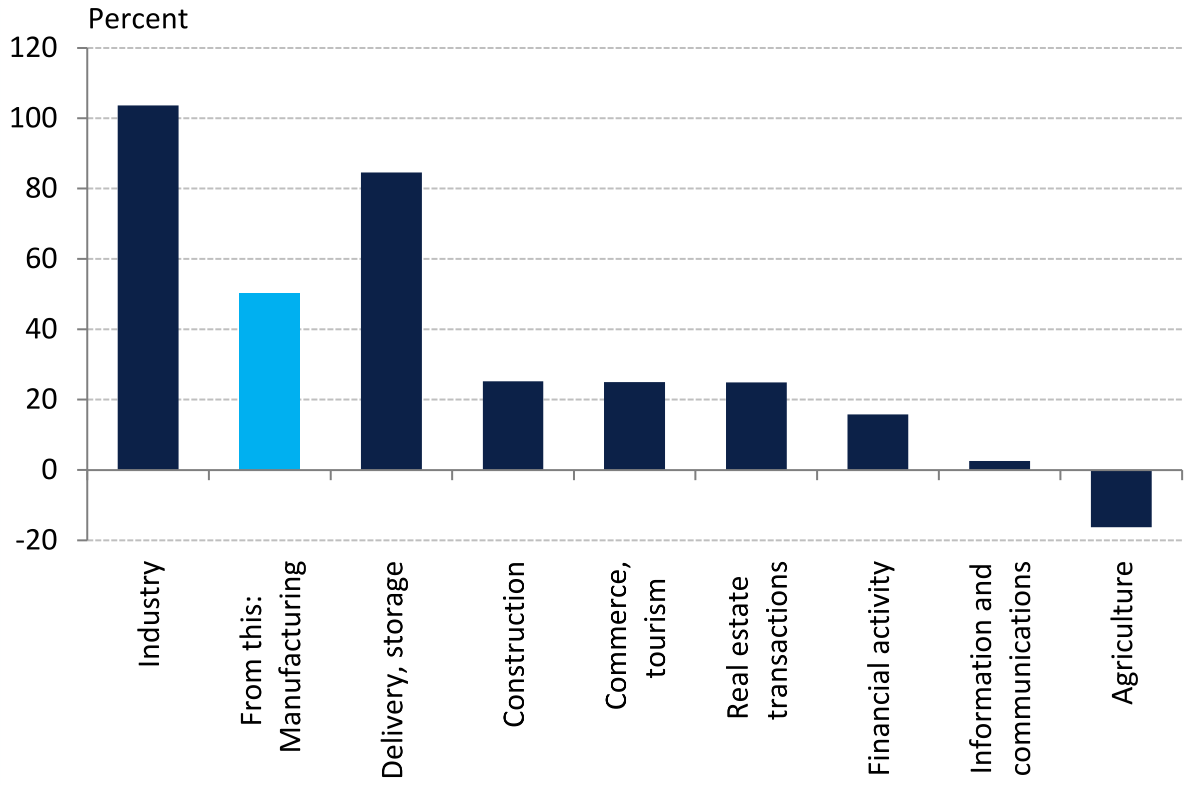


Nominal data. Annual change

Source: Eurostat

Gross operating surplus doubled in the industry sector compared with the same period of 2021. Of course, this was mainly supported by the outstanding jump in the profits of the energy industry, in connection with energy prices soaring to historic heights. High profit growth was present in a wide range of economic branches, annual change in gross operating surplus also exceeded 50% in the delivery, storage and manufacturing sectors in the third quarter. (Graph 10). The increases in profits across the board underlines that companies were able to improve profitability in parallel with increasing prices.

Annual change in gross operating surplus and mixed income in Q3 2022 Graph 10



Nominal data

Source: HSCO

4. Conclusion

High wage and price growth has been present in Hungary recently, and while high wage growth has started to be reflected in prices, inflation has not really been reflected in wages yet. Wage dynamics has been double digit for the past five years, which can mainly be explained by the tight labour market and minimum wage increases – partly compensated for significant decreases in social security contributions. In 2022, according to various surveys, only 30–40% of companies were planning to implement additional wage increases due to rising inflation, which confirms that inflation has not been the main reason for increasing wages. At the same time, the role of domestic factors has strengthened in the development of prices. In addition to stronger wage-price pass-through, low productivity in the food industry in Hungary has also caused prices to increase. Moreover, the acceleration of price growth does not reflect higher costs alone – there has been a significant rise in profits.

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