

## ARTICLE – Strong economic activity but subdued wage increases

Discussion is ongoing both in Sweden and abroad as to whether the relation between wage increases and the level of economic activity has weakened since wages are currently rising slowly despite strengthening economic activity. The Riksbank expects Swedish wage development in the years ahead to be moderate in relation to the domestic economic situation. Comparatively weak productivity growth, together with a subdued wage rate abroad, is contributing to this. The link from wages to inflation goes mainly via unit labour costs. This means that even relatively subdued wage development, in relation to economic activity, can be inflationary if productivity is concurrently weak. There are other factors that can affect wage growth, however, such as structural changes to the labour market and the possible adjustment of wage and inflation expectations to the long period of low inflation. This brings an element of uncertainty to the Riksbank's forecasts in the years ahead.

### Moderate wage increases in the coming years

Wage development affects household income and corporate costs, and thereby inflation and monetary policy. Historically, the covariation between wage increases and economic activity in Sweden has been relatively strong (see Figure 4:15).<sup>18</sup> When resource utilisation has increased, so too has wage growth a few quarters later. Most recently, however, this relation has been weaker.<sup>19</sup> This may be due to temporary factors, but recently concluded central wage agreements indicate that wage increases also in the years ahead will be moderate in relation to historical correlations with the economic situation. The Riksbank's wage forecast, which refers to total wage increases, is based on the assumption that the strong economic activity with increasing difficulties for companies to recruit staff means that wage increases over and above agreement will successively increase over the forecast period (see Figure 4:15). But the forecast nevertheless means that wages will increase moderately. Historical correlations with domestic resource utilisation could suggest an even higher wage rate.

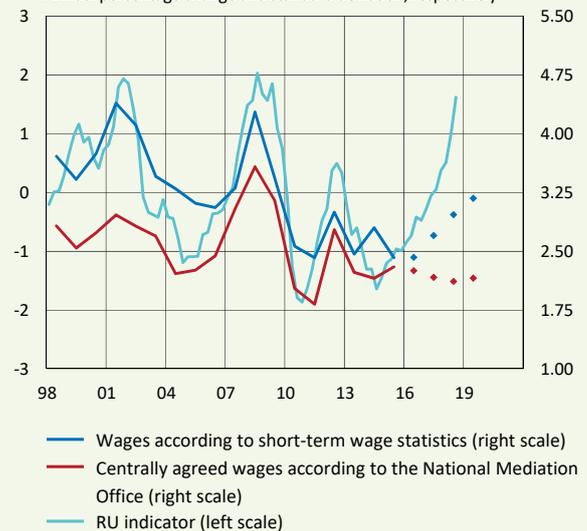
The discussion on whether the relationship between wage development and resource utilisation in the economy has changed is also taking place internationally and a number of explanatory factors have been highlighted.<sup>20</sup> This article is based on this debate and highlights a number of factors that may explain why wage increases in Sweden are expected to be moderate in the years ahead.

### Many factors influencing wage development

Apart from the economic situation, short-term wage development can be explained by factors such as productivity growth, inflation expectations and the profit situation in

companies. When the social partners negotiate central agreements, international competitiveness and wage growth in other countries are also important. Resource utilisation abroad is thus also relevant for wage development. Also, more institutional factors, such as the unions' bargaining strength and changes in tax and compensation systems that influence the incentive to work can be significant, as can changes in the labour force for demographic reasons.

**Figure 4:15. Wages, wage agreements and resource utilisation**  
Annual percentage change and standard deviation, respectively



Note. The RU-indicator has been moved forward six quarters in the figure. Blue points represent Riksbank forecasts. Red points represent the National Mediation Office's forecasts of centrally agreed wages for the coming years.

Sources: National Mediation Office, Statistics Sweden and the Riksbank

<sup>18</sup> The covariation is particularly strong with the Riksbank's RU indicator, but wage development has also covaried well with various labour market gaps.

<sup>19</sup> This is above all true for the wage rate according to the NMO wage statistics, but to a certain extent also for wage growth according to the National Accounts.

<sup>20</sup> See, for instance, articles in "Inflation Report - February 2017", Bank of England, and in "European Economic Forecast – Spring 2017", European Commission and "Labour Market and Wage developments in Europe - Annual Review 2016", European Commission.

### Weak productivity growth

Rising productivity is a pre-condition for real wages to be able to rise more sustainably. Since the financial crisis, productivity has developed weakly, both in Sweden and in many other developed economies.<sup>21</sup> The Riksbank does consider that productivity growth in Sweden will recover somewhat in the years ahead (see Figure 4:11). However, development is expected to continue to be weaker than the historical average rate of increase, which is expected to hold wage development back in the years ahead.

**Figure 4:16. Average inflation expectations and wage expectations of the labour market parties**



Source: TNS Sifo Prospera

### Inflation expectations and adjustment after the financial crisis

It is possible that wage increases have been affected by inflation having been below target for several years.<sup>22</sup> Since 2015, however, both actual inflation and the partners' inflation expectations have risen clearly. Nevertheless, wage expectations one and two years ahead continue to be lower than what they have been historically and have not risen in step with inflation expectations (see Figure 4:16).

Another explanation for moderate wage increases presented internationally is that nominal wages were not adjusted downwards enough in conjunction with the financial crisis, which meant that it was necessary to have a long period of restrained wage development.<sup>23</sup> Based on data and

indicators, the need for such an adjustment does not seem to be particularly great in Sweden currently. During the period 2012–2015, real wages increased relatively quickly as inflation was lower than the social partners had expected. However, the profit share in the business sector has recovered in recent years, although it is still lower than the historical average<sup>24</sup>. But survey-based measures, such as the profitability assessments in the Economic Tendency Survey, suggest that companies are satisfied with their profitability. Relative to other countries, however, the profit share has developed slightly more weakly in the manufacturing industry, which sets the standard for wages.<sup>25</sup> This may have affected the level in the central agreements.

### Wage development even more subdued in the euro area

Sweden is a small, open economy and is greatly affected by international developments. Since the Industrial Agreement was adopted in 1997, collective wage agreements in the industrial sector have set the standard for the rest of the labour market. One argument for the industrial sector setting the standard for wages is that it is exposed to international competition. Among other things, international competitiveness is usually assessed on the basis of various comparisons of cost development in competitor countries. Earlier, economic activity in Sweden has covaried to a high degree with economic activity in the euro area. However, in recent years and particularly in 2015, growth in the Swedish economy has been relatively high and, at present, resource utilisation in Sweden is deemed to be higher than normal, while it is slightly lower than normal in the euro area (see Figure 4.17).<sup>26</sup>

A lower resource utilisation in the euro area has most likely contributed to wage development in the euro area being subdued in recent years in comparison with Sweden. When the most recent industrial agreement was concluded in Sweden, the parties pointed to competitiveness and cost development abroad as being two of the most important factors for the level of centrally agreed wage increases.<sup>27</sup> This means that the weak wage development abroad has affected the result of the wage negotiations. But ultimately, competitiveness does not just depend on the relative development of nominal wages. Also factors such as relative productivity growth and the exchange rate have an influence.

<sup>21</sup> For an overview, see "OECD Compendium of Productivity Indicators 2017".

<sup>22</sup> For an analysis of how earlier inflation has affected wage development in the euro area, see "Recent wage trends in the euro area", Economic Bulletin, Issue 3/2016, ECB.

<sup>23</sup> For a discussion on the United States, see Daly, M. and Hobijn, B. "Why Is Wage Growth So Slow?", Federal Reserve Bank of San Francisco Economic Letter, 2015.

<sup>24</sup> A relatively large share of the decrease in the profit share since the mid-1990s can, however, be explained by the changed composition of the business sector, see "Lönebildningsrapporten 2016" (in Swedish only, summarised as Wage Formation in Sweden 2016), National Institute of Economic Research.

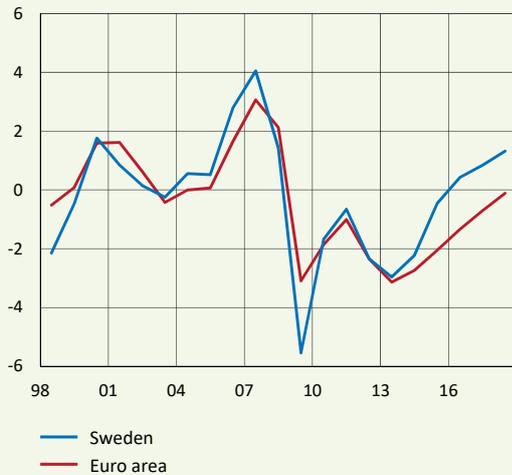
<sup>25</sup> See "Lönebildningsrapporten 2016" (in Swedish only, summarised as Wage Formation in Sweden 2016), National Institute of Economic Research.

<sup>26</sup> There is considerable uncertainty surrounding the amount of spare capacity in the euro area. In addition to unemployment still being higher than it was before the

financial crisis, the number of persons who are available but not seeking work and underemployed persons are also on higher levels. This indicates that the amount of spare capacity may be greater than unemployment figures suggest, see, for instance, the article "Assessing labour market slack" in ECB Economic Bulletin, 3/2017. The equivalent does not apply in Sweden, where both the number of underemployed persons and the numbers of persons who are available but not seeking work are on low levels.

<sup>27</sup> See "AVTAL 2017 - Industrins konkurrenskraft avgör" (AGREEMENTS 2017 - Competitiveness in the industrial sector the deciding factor), In Swedish only, Teknikföretagen (Association of Swedish Engineering Industries), 2016 and "Ekonomiska bedömningar Hösten 2016" (Economic assessments Autumn 2016), In Swedish only, Facken inom industrin (Swedish Unions within Industry), 2016.

**Figure 4:17. Output gap in Sweden and the euro area**  
Per cent



Note. The output gap for the euro area is an average of estimates made by the European Commission, IMF and OECD.

Sources: European Commission, IMF, OECD and the Riksbank

### Changed bargaining power

Other factors being discussed internationally and that may have affected wage development are: a potentially weaker bargaining power for employees as a result of globalisation; a lower unionisation share coupled with an increase in more flexible forms of employment.<sup>28</sup> In Sweden, the unionisation share is still on a high level in an international perspective and collective agreements cover the majority of employees. Since the early 1990s, however, unionisation has decreased by 16 percentage points. The decline over the last decade has been particularly significant among foreign-born persons, a group that has concurrently seen strong employment growth.<sup>29</sup> This may have had a restraining effect on wage growth.

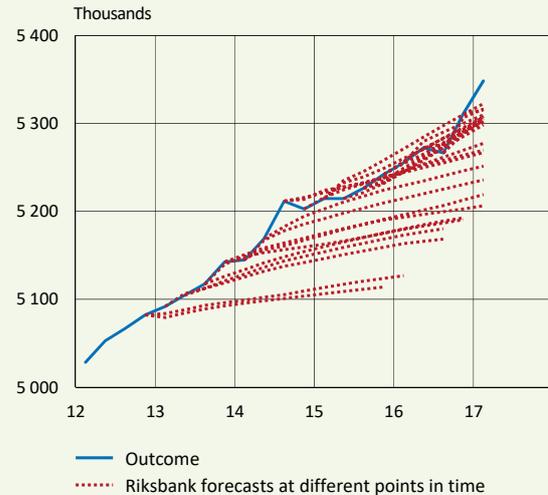
There have also been other changes on the labour market. For example, the use of agreements without centrally specified wage margins, known as 'figureless agreements', has increased in recent years. So far, it has not been possible to prove that this change has had any effect on individual wage development.<sup>30</sup> Also, the share of employees with fixed-term contracts has increased. Persons with fixed-term contracts have a weaker foothold on the labour market and probably also a weaker bargaining position, which may have subdued wage development somewhat.

### Increased labour supply

The size and flexibility of labour supply may also affect wage development. Increased possibilities for recruiting personnel from other countries are, for example, one factor that may have affected the unions' bargaining power, although the number of labour migrants in Sweden on a more temporary basis is low as a share of the total labour force.<sup>31</sup> The use of so-called 'posted workers', i.e. workers who are sent to another country by their employer to work there for a fixed period, also seems to have been relatively limited according to available statistics. In some industries, foreign labour constitutes a larger proportion of the workforce and there is also uncertainty surrounding the reporting. On the margin, the presence of foreign labour supply, regardless of its size, may have an effect on wage development.<sup>32</sup>

How labour supply develops is affected to a large degree by demography. In Sweden, the working-age population registered as resident has increased, mainly as a result of a long period of immigration (see Figure 4:8). This has contributed to an unexpectedly rapid increase in labour (see Figure 4:18), which tends to subdue wage growth.

**Figure 4:18. Outcomes and forecasts for the number of people in the labour force**  
Thousands



Sources: Statistics Sweden and the Riksbank

New regulations on the labour market can also affect labour supply as behaviours, and hence the functioning of the labour market, change. For example, in Sweden, the various earned income tax credits and changes in the unemployment insurance have led to it being more profitable to work, compared with not doing so. This has also contributed towards an increase in labour supply. In the near term, the

<sup>28</sup> See, for instance, a speech by Haldane, A. "Work, Wages and Monetary Policy", Bank of England, June 2017.

<sup>29</sup> Refers to foreign-born workers, see Kjellberg, A. "Kollektivavtalens täckningsgrad samt organisationsgraden hos arbetsgivarförbund och fackförbund" (The coverage ratio of collective agreements and degree of unionisation among employers' confederations and trade unions), in Swedish only, Lund University, 2017.

<sup>30</sup> See "Sifferlösa avtal och andra avtalskonstruktioner" (Figureless agreements and other agreement constructions), in Swedish only, SACO (Swedish Confederation of Professional Associations), 2016. The study compares wage development for academics with and without figureless agreements between 2013 and 2014.

<sup>31</sup> See "Ett välfungerande system för arbetskraftsinvandring?" (summarised as "An effective labour immigration system?"), Swedish National Audit Office, 2016.

<sup>32</sup> Lex Laval was repealed on the 1 June, which means that Swedish employee organisations are now allowed to take industrial action to get posted workers' employers to sign collective agreements. They may only set requirements for equivalent minimum wages and other minimum terms and conditions in accordance with the Posting of Workers Act, see Swedish Work Environment Authority, [www.av.se](http://www.av.se).

regulations can also have a restraining effect on wage demands by contributing to a lower net replacement rate.<sup>33</sup> The Riksbank's assessment is that labour growth will slow in the years ahead mainly due to that population growth is expected to decline.

### Wage forecasts in a Phillips curve

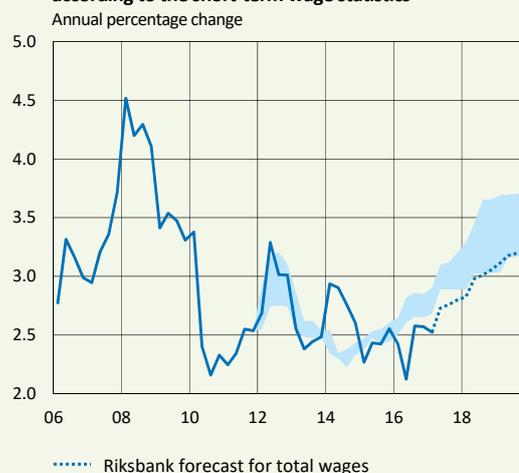
By estimating different variations of a so-called 'Phillips curve' for wages, it is possible to investigate wage growth that could be expected against the backdrop of domestic resource utilisation, international developments and productivity growth. The following specification is used:

$$\Delta w = \alpha + \pi^e + \beta_1 RU^{SE} + \beta_2 RU^{EA} + \beta_3 PROD + \varepsilon$$

in which  $\Delta w$  is wage development according to NMO expressed as an annual percentage change,  $\pi^e$  is inflation expectations five years ahead,  $PROD$  is the Riksbank's assessment of trend productivity growth in Sweden and  $RU^{SE}$  and  $RU^{EA}$  are three different measures of resource utilisation in Sweden and the euro area respectively.<sup>34,35,36</sup> A total of nine different regressions are estimated. All the explanatory variables apart from productivity growth have various degrees of time lag.

The light-blue field in Figure 4:19 shows the predicted NMO wage growth according to the estimated regressions. The model forecasts indicate that wage growth will rise in the years ahead, in line with the Riksbank's forecast showed in the dashed line. However, historical correlations with only domestic resource utilisation would suggest higher wage growth than both in the light blue field and the Riksbank's forecast. Relatively weak productivity growth and continued low resource utilisation in the euro area go some way to explaining why wage increases are expected to be subdued in relation to the domestic economic situation in the years ahead. In the estimations, productivity growth and resource utilisation will hold back wage increases by about 0.1–0.2 percentage points each in the years ahead.

**Figure 4:19. Outcome and forecasts for the wage increase according to the short-term wage statistics**



Note. The field shows adjusted values between 2012 and the first quarter of 2017. Thereafter, model forecasts are shown.

Sources: National Mediation Office and the Riksbank

### Wages over and above centrally agreed ones

Given that recently concluded wage agreements point to a relatively unchanged wage growth in the years ahead, the Riksbank's wage forecast implies that wages over and above central agreements are gradually expected to increase more rapidly (see Figure 4:15). Historically, labour shortages, low agreed wage increases and higher inflation have led wages over and above agreement to increase slightly more rapidly.<sup>37</sup> Wages over and above agreement depend on several factors. Local wage formation has an effect, both via negotiations between the employer and the local union or individual worker and via individual agreements with new recruits. The measured wages over and above agreement are also affected by changes to the composition of the labour force.<sup>38</sup> Internationally it has been noted that changes to the composition of the labour force have held back wage development.<sup>39</sup> Most recently, wages over and above agreement have developed weakly in Sweden (see Figure 4:15). At the same time, wage growth among persons employed at the same company with the same position has been higher than the average wage development.<sup>40</sup> This indicates that wages over and above agreement can have held back by changes in the composition of the labour force, which could also affect development in the period ahead.

<sup>33</sup> See Bennmarker, H. et al. "Earned income tax credits, unemployment benefits and wages: empirical evidence from Sweden", working paper 2013:12, Institute for Evaluation of Labour Market and Education Policy (IFAU). In conjunction with the 2016 Budget Bill, some of the tightening on unemployment benefit was reversed. This increased the rate of pay after tax, i.e. the share of the previous wage replaced by unemployment insurance.

<sup>34</sup> The Riksbank does not forecast the RU indicator and inflation expectations. In the projection, they are assumed to remain at their current level.

<sup>35</sup> The equations are estimated based on data for the period 1998Q1–2017Q1. For the euro area, the GDP gap according to the IMF, European Commission and OECD is used. For Sweden, the Riksbank's RU indicator, unemployment gap and employment gap are used.

<sup>36</sup> As the economic situations in Sweden and the euro area are closely correlated, this could affect estimates of the coefficients in the equations. However, in this case, the correlation is not strong enough to affect the estimates noticeably.

<sup>37</sup> See the article in the labour market report "Tudelningar på arbetsmarknaden" (Divisions on the labour market), Swedish Labour Policy Council (AER), 2017.

<sup>38</sup> The total wage increases are measured as the difference in average wages between two points in time. If, for example, staff with a high average wage are replaced by staff with a low average wage between two points in time, this will affect the growth figures.

<sup>39</sup> See, for instance, "Inflation Report February 2016", Bank of England.

<sup>40</sup> Refers to wage development 2015, see, for instance, "Collective bargaining and wage formation 2016", National Mediation Office.

Development may also have been influenced by previously mentioned changes in the labour market.

**Cost pressures relatively normal in the years ahead**

The link from wages to inflation primarily goes via unit labour cost, which means that even a subdued wage development can be inflationary if productivity growth is concurrently weak. In the Riksbank's forecast, both wages and productivity develop more weakly than historically. Unit labour costs are, however, expected to rise in line with the historically average growth rate and thereby contribute to rising inflation. The assessment of both wage development and productivity growth in the years ahead is associated with uncertainty, however. Weaker productivity growth or a higher wage rate would lead to higher cost pressures and vice versa.

**Moderate wage increases expected but forecast is uncertain**

The Riksbank has been influenced by the factors discussed in this article and the main scenario for wage development is therefore in the lower span of the model forecasts in Figure 4:19. It is possible that the effects of these factors are greater. At the same time, historical relationships with resource utilisation in the economy suggest stronger wage development than in the Riksbank's forecast in the years ahead. Therefore there are both upwards and downwards risks in the forecast.