Analysis

# Do wages contribute to flexibility and competitiveness in a monetary union?

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Wage-setting is a key macroeconomic mechanism for employment and economic growth, and in a member state of a monetary union, its importance is even greater. Wages largely determine how the economy responds to shocks, as individual members of a monetary union do not have the possibility of resolving the situation via the exchange rate or by adjusting the nominal interest rate. Prices and wages also determine the real exchange rate of countries in a monetary union and thus play a key role in the development of competitiveness.



In Finland, extensive negotiations will take place on collective labour agreements this year and next. The constraints on wage negotiations in the immediate years ahead are membership in the monetary union, low euro area inflation, the legacy of the double-dip recession and subsequent upswing, as well as globalisation and digitalisation trends that are also shaping the Finnish labour market. On the one hand, the wage-setting system should be flexible in the short term if conditions clearly deviate from those expected. On the other hand, the wage-setting system should, in the long term, lead to favourable developments in employment and balanced growth in the economy.

A wage growth rate that is aligned with balanced economic growth can be derived from the objective that is set for wage formation. For a small country in a monetary union, maintaining cost-competitiveness is a key target, as it lays the foundations for the success of the economy's tradable sector and, thus, jobs growth and growth in value added. If maintaining cost-competitiveness is used as a starting point for wage-setting, it must take into consideration not only productivity and price developments but also developments in the labour costs and labour share of key competitor countries.

In this article, we look at macroeconomic theory and international empirical evidence to analyse the role of wages in determining short-term economic adjustment on the one hand, and, on the other hand, long-term developments in competitiveness. We discuss how findings from the research literature could be used to inform the framework for wage-setting in Finland.

## Wages and the adjustment of the economy to shocks

For countries in a monetary union, price and wage flexibility is often seen as a substitute for flexible exchange rates as a means for the economy to adjust to negative external shocks.[1] In the theory of optimum currency areas, price and wage flexibility is one of the four adjustment mechanisms that can stand in for interest rate and exchange rate adjustments.[2]

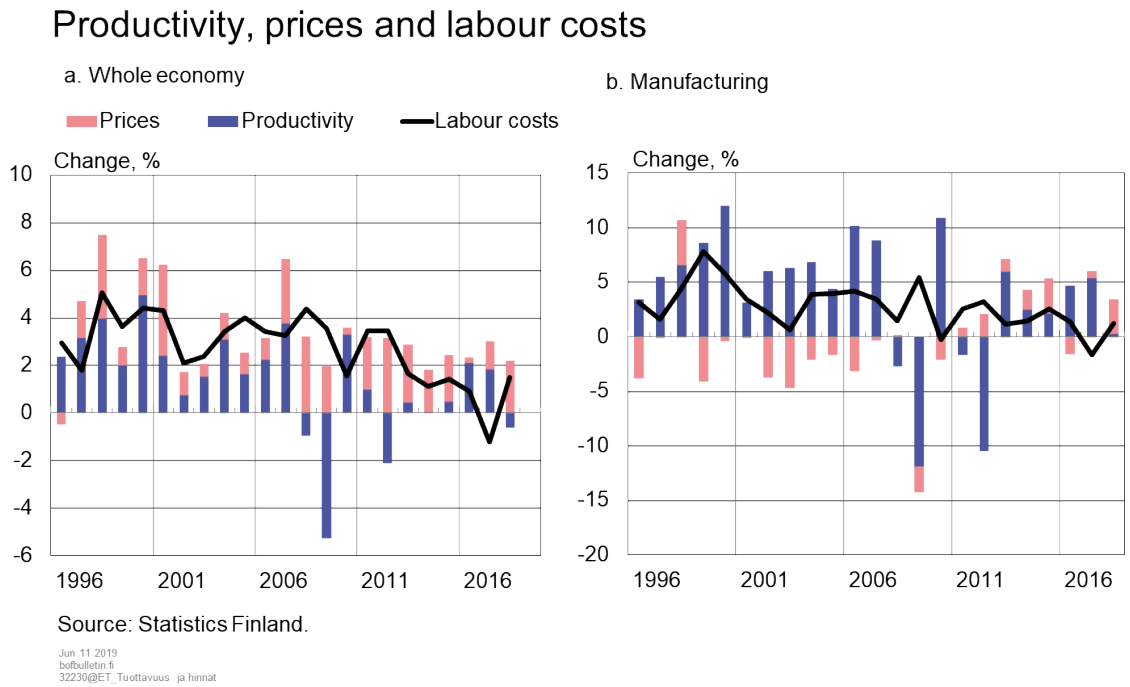
### Competitiveness and demand channels in macroeconomic adjustment

During the recession that followed the financial crisis, euro area output contracted and unemployment increased. According to Blanchard (2018), the euro area sovereign debt crisis showed that the wage-setting process, or as referred to by him, the third leg of the monetary union architecture, did not function adequately.[3] When countries face various shocks and labour mobility across countries is virtually non-existent, wages and prices ought to be flexible, helping countries return to equilibrium. This did not happen everywhere in the euro area, and adjusting to negative shocks has been a painful process for some countries.

The potential role of wage flexibility as a channel of macroeconomic adjustment can be illustrated by examining the mechanisms of a simplified model of a small open economy (Chart 1).

Macroeconomic adjustment to, for example, a decline in competitiveness and the resulting contraction in export demand for a small country in a monetary union usually takes place in stages. As a consequence of this type of a shock, output contracts and unemployment increases. Higher unemployment leads to a decline in real wages, which in turn pushes down prices. The decline in prices improves a country's competitiveness, strengthens demand for its exports, and boosts employment.

Chart 1.




In addition to this *competitiveness* channel, lower wages also lead to a decrease in aggregate demand in two ways. If lower wages are not compensated by an increase in employment, this will lead to a weakening of household purchasing power and thus a decline in domestic consumption demand. In addition, a slowing of wage and price developments, in response to a negative demand shock, leads to a rise in the real interest rate, as the common nominal rate, set by the central bank of a monetary union, does not respond to subdued price developments in one member state. This real interest rate channel will also lead to a weakening in domestic demand.[4]

As a rule, the competitiveness channel increases aggregate demand and the purchasing power and real interest rate channels decrease aggregate demand. The research evidence on the relative

importance of these channels is mixed. The extent to which the purchasing power and real interest rate channels dampen growth in aggregate demand depends on a number of factors, e.g. the response of consumption and investment to changes in the real interest rate, price flexibility and the response of employment to changes in wages, and on the share of export demand and domestic demand in aggregate demand.

In a country with independent monetary policy, a decrease in wages and slowing of inflation would, in a simplified theoretical framework, lead to a loosening of monetary policy and a decline in the real interest rate, i.e. the impact on both external and domestic demand would be positive.

## Is wage flexibility a viable mechanism of macroeconomic adjustment?

In the research literature, arguments have been made that call into question the effectiveness of wage flexibility as a channel of adjustment in members of a monetary union. Some of these views emphasise the relative strength of the various channels, whereas others emphasise wage flexibility itself.

For example, Galí and Monacelli (2016) state that contrary to conventional wisdom, wage flexibility is not a particularly effective adjustment mechanism in a currency union. This is due to the aforementioned dampening effect of a rise in the real interest rate on aggregate demand, which offsets the positive impact of the competitiveness channel on employment and private consumption.[5] According to Galí and Monacelli (2016), wage flexibility as an adjustment mechanism to adverse shocks should therefore be complemented with economic policies that support aggregate demand. This would raise prices and thus lower the real interest rate. In a monetary union, accommodative fiscal policy could be effective in this role.

The literature includes a variety of views on the role of the real interest rate. In models with forward-looking agents, the aggregate demand response depends on the entire interest rate path and not only on the behaviour of the short-term rate (Woodford 2003). Corsetti et al. (2011) demonstrate that the long-term real interest rate also responds to negative price shocks. In contrast to the short-term real interest rate, the long-term rate declines, as consumers expect inflation to pick up in the future. A decline in the long-term real interest rate supports consumption demand and offsets the dampening effect on consumption caused by the rise in the short-term real interest rate. Based on this, the scenario presented by Galí and Monacelli (2016), where the real interest rate effect would weaken the competitiveness channel, seems unlikely. The analysis by Corsetti et al. (2011) would thus support the conventional wisdom according to which, in a country participating in a currency union, wage flexibility would be an effective adjustment mechanism in response to negative shocks. Correspondingly, this would also mean that fiscal policy would be a relatively ineffective stimulus measure particularly in countries in a currency

area.

Domenech et al. (2016) perform empirical analysis of the effects of wage flexibility on the Spanish economy following its adjustment to the debt crisis after 2012. The results show that the labour market reforms that had a downward impact on labour costs also had a positive impact on output and employment. They also strengthened the country's cost-competitiveness and current account. The labour market reforms also improved the overall functioning of the labour market, so the results are not solely based on the gains from wage flexibility.

## Wage flexibility in practice

Wage flexibility as a channel for macroeconomic adjustment has been called into question not only on a theoretical basis but also based on real-world evidence where employment growth has been found to have only a limited impact on wages. In addition, even in the presence of wage flexibility, the pass-through of wages to prices has been surprisingly small in recent years (Blanchard 2018).

In the research literature, there is ample international evidence of downward wage rigidity (e.g. in Dickens et al. 2007[6], Messina et al. 2010[7], Holden and Wulfsberg 2014).[8] Firms typically respond to a weak cyclical situation by reducing the number of persons employed or hours worked, whereas wage cuts are a less frequently applied measure (e.g. Fabiani et al. 2010, Fabiani et al. 2015, Izquierdo et al. 2017).

A common characteristic found in various countries is that in a conventional downturn, the wage cuts required by macroeconomic adjustment have not been implemented and have instead been replaced by wage freezes. This suggests nominal wage rigidity. Correspondingly, wage cuts only to the level of actual or expected inflation are indicative of real wage rigidity. The prevalence of downward nominal wage rigidity may however decrease significantly in the case of strong negative shocks. Downward nominal wage rigidity decreased strongly in countries which suffered GDP declines of 10% or more during the crisis. This applies to Estonia in the period 2008–2009 and to Greece and Cyprus in 2010–2013 (Izquierdo et al. 2017).[9]

There also is research evidence of wage rigidity in Finland. According to Böckerman et al. (2010) and Vainiomäki (2017), the Finnish labour market is usually characterised by a significant degree of real wage rigidity, but during deep recessions, wage flexibility is accepted. According to Böckerman et al. (2010), the constraint of real rigidity on wage determination was relaxed during the depression, but nominal rigidity served as a floor for downward wage flexibility. According to Vainiomäki (2017), cuts in real wages increased in Finland during the recession that followed the financial crisis. Kotilainen (2018) also finds that wage rigidity was smaller in the recession that followed the financial crisis.

## Is there a pass-through of wages to prices?

The research literature presents a variety of results on the link between wages and prices. Research based on US data has taken a sceptical view on the connection between labour costs and inflation, particularly in the short term. These studies do not present unambiguous evidence of whether labour costs tend to precede or follow prices (see e.g. Knotek and Zaman 2014, Bidder 2015). The results also vary between the sample periods (e.g. Mehra 2000; Emery and Chang 1996; Peneva and Rudd 2017).

As regards the euro area, for example Bobeica et al. (2019) present empirical evidence of the link between labour costs and price inflation in the period 1985–2018. The results of the study show that the pass-through of labour costs to price inflation is more likely during demand shocks than supply shocks. The pass-through is systematically lower in periods of low inflation than in periods of high inflation.

According to Druant et al. (2012), the results of an extensive survey of firms in the euro area show that there is evidence of a pass-through of wages to prices. Wages are adjusted less frequently than prices, and wage changes typically occur at a particular time of the year (mostly in January). Firms with a high labour cost share report a tighter link between price and wage changes and a lower frequency of price adjustment. Price flexibility is higher if the intensity of competition is high and the coverage of collective wage agreements and degree of employment protection are relatively low. The degree of price rigidity is higher in firms with a large share of high-skilled and white-collar workers. The study by Druant et al. (2012) finds a statistically significant relationship between the frequency of wage changes and that of prices; the effect in the opposite direction is not significant. Over 60% of firms reported that they would increase prices if they faced a permanent unexpected increase in wages.

# Wage-setting is a key determinant of competitiveness in the longer term

The preceding section discussed whether wages will adjust downwards if the economy is faced with adverse shocks, and whether this is an effective channel of macroeconomic adjustment. Short-term adjustments are also linked to longer term developments. If wages do not adjust downwards and the economy is hit by an external shock that reduces output, there is risk of increased and protracted unemployment. In the longer term, wage-setting is also of key importance to countries in a monetary union. When domestic labour costs grow faster than productivity or labour costs in other countries, cost-competitiveness is reduced without the possibility for the nominal exchange rate to adjust accordingly. This may jeopardise the success of

the economy's tradable sector on international markets and erode the potential for long-term growth.

The economy's price and wage-setting mechanisms are key determinants for the functioning of the competitiveness channel. When prices and wages are rigid, demand and supply shocks both lead to greater cyclical fluctuations in GDP and employment than when prices and wages are completely flexible. However, the main result of theoretical studies is usually that, in spite of price rigidities, the economy will eventually recover from temporary shocks that reduce output and return to equilibrium through depreciation of the real exchange rate, i.e. through improved competitiveness.[10]

As discussed earlier, Galí and Monacelli (2016) argue that appreciation of the real interest rate dampens the effects of adjustment through the competitiveness channel when the country does not have an independent monetary policy or when monetary policy is constrained by a binding zero lower bound. However, they note that permanent cuts to wages and labour costs in a situation where competitiveness is weakened will raise both employment and the terms of trade to some extent. In other words, the competitiveness channel's contribution to export and GDP growth is greater than its purchasing power and real interest rate effects, both of which reduce domestic demand. Moreover, in the long term, the effects will be the same regardless of whether the country is within or outside a currency union, although the effects will be different in the short term.

Throughout the existence of the euro area, there have been long-standing differences in inflation, competitiveness and current account balances among its member states, which have been explained by, for example, ineffective operation of the adjustment mechanism based on competitiveness. Carlin (2013), in turn, suggests that the economy may depart from its equilibrium for extended periods, or even permanently, if inflation expectations are backward-looking. In such cases, following negative developments in wages and prices, inflation expectations would decrease and, consequently, the real interest rate would rise. The mechanism through which competitiveness would stimulate output growth would still remain in place. However, in the case of such inflation expectations, there would be no guarantee of the economy returning to equilibrium.[11]

## Improving competitiveness through internal or fiscal devaluation

Downward wage flexibility is often offered as a solution to the more persistent imbalances described above, such as loss of competitiveness and high unemployment. Policy measures that unilaterally lower wages or slow down wage developments in a country are called internal

devaluation or, if such measures are funded by tax rises, fiscal devaluation.[12]

It is difficult to empirically estimate the impact of internal and fiscal devaluation on output and employment. There are relatively few cases, and it is difficult to isolate the impacts on the economy from other events and economic policy measures. Model-based analyses typically conclude that the impacts of fiscal devaluation on employment and output are positive, albeit very small. This result is therefore consistent with Galí and Monacelli (2016) regarding permanently lowered labour costs.

Price and wage rigidities play a key role in the short-term dynamics of the economy and in the outcome of fiscal devaluation. If domestic prices are very rigid, reductions in wage costs are reflected in prices very slowly. In the case of rigid prices, a reduction in nominal wages aimed at lowering production costs will significantly diminish real wages. This will reduce the private sector's purchasing power and consumption in the short term. If lower wage costs are not followed by a corresponding decline in domestic unit costs, export prices will not decline either, in which case the impact on competitiveness may prove very small.[13]

For small countries in a currency union, the potential negative short-term impact of fiscal or internal devaluation on demand cannot be mitigated by lowering the nominal interest rate, so the real interest rate will rise by the same amount that inflation slows. The real interest rate channel's diminishing effect on domestic demand therefore also applies to situations where a member of a currency union seeks to improve its competitiveness by means of internal or fiscal devaluation.

## Competitiveness imbalances in the euro area

Estrada, Galí and López-Salido (2013) examine the convergence of euro area countries from the perspective of unemployment and current account data and consider the role of competitiveness in this evolution.

The current account is closely related to cost-competitiveness and wage-setting, as the current account represents the difference between the value of exports and imports of goods and services, where cost-competitiveness has a significant impact. An examination of current accounts and unemployment rates in the euro area shows that the EMU era includes two very different phases. According to Estrada et al. (2013), in the period before the financial crisis, current account imbalances increased considerably more in the euro area than in other advanced economies. However, since 2007, almost all the imbalances have reversed, because after the financial crisis, deficits decreased in countries that had increased them. Yet, all the countries that showed surpluses before the financial crisis, except for Finland, are still showing surpluses.

Estrada et al. (2013) show that competitiveness measured in terms of unit labour costs has been a key explanatory factor in the evolution of current account balances in the euro area, especially after the financial crisis. Countries that incurred deficits before the crisis have lowered their wage costs for firms, thus improving domestic cost-competitiveness. The reduction of competitiveness imbalances has also reduced euro area current account imbalances after the financial crisis, as improved cost-competitiveness in former deficit countries has improved export and weakened import conditions.

In the decade leading up to the financial crisis, unemployment rates across the euro area converged, but since 2008, unemployment rates have diverged – and much more than in other advanced economies. This also points to the possibility that the dispersion may be caused by factors related to wage-setting. Disparities in how wages, i.e. the price of work, adjust to fluctuations in output can give rise to differences in the adjustment in the quantity of labour. Gächter et al. (2017) looked at the significance of wage growth for the convergence of the euro area. According to them, dispersion in the rates of wage growth among euro area countries has led to a divergence of business cycles, contrary to the recommendations of optimum currency area theory.

Gächter et al. (2017) find that in the early years of the common currency, from 1999 to 2008, the euro area countries where nominal unit labour costs grew the quickest also exhibited the strongest GDP growth, but they also had the biggest current account deficits. This would be consistent with the assertion that the rise in labour costs in that period strengthened household consumption and aggregate demand more than diminishing cost-competitiveness contracted it.

Gächter et al. (2017) point out that the effects of the competitiveness and domestic demand channels are timed differently. Despite similar productivity growth rates in the euro area's core countries and in the peripheral countries before the onset of the financial crisis, nominal unit labour costs increased faster in the periphery than in the core. This resulted in the weakening of external competitiveness, but at the same time, increased purchasing power and a lower real interest rate. Domestic demand quickly reacted to rising purchasing power and declining real interest rates. Weaker cost-competitiveness, in turn, is reflected in net exports with a delay.[14]

According to Estrada et al. (2013), along with cost-competitiveness, the other key factors contributing to euro area current account performance include real competitiveness and, in particular, factors related to innovation, business conditions, goods markets efficiency and technological readiness. It is important to identify the causes of current account developments, as a current account deficit may not always be the result of competitiveness issues but instead other factors that cause changes in the overall fiscal position. Both changes in competitiveness and fluctuations in the current account may reflect adjustment to changes in the fundamentals of the

economy, which manifest as changes in the aggregate economy's overall appetite for saving.

However, in the case of the euro area, it appears that the disparities in competitiveness also largely explain the divergence of current accounts. This underscores the importance of the wage-setting system in determining the external balance, although real competitiveness and productivity also play a role.

## Wage-setting and competitiveness in Finland

In the long term, the wage-setting system should support balanced economic growth. A wage growth rate that is aligned with balanced economic growth can, in turn, be deduced from the target that is set for wage-setting.

For a small member state in a currency union, such as Finland, without its own floating currency, maintaining cost-competitiveness is a key target, as it creates preconditions for a successful tradable sector and, thus, growth in jobs and value added. Cost-competitiveness can be considered to have an 'equilibrium level' where conditions for production and employment in the tradable sector are in line with their long-term trends.[15]

Experiences from Finland and several other euro area countries show that external competitiveness can weaken for a protracted period without having an immediate negative impact on economic developments. The nominal interest rate or exchange rate of a country in a monetary union does not react if its cost level rises excessively, and a loss of competitiveness has a delayed impact on net exports. At the same time, increased purchasing power and a lower real interest rate boost domestic demand. In the longer term, a loss of competitiveness will begin to weaken the operating conditions of the nation's tradable sector, consequently curbing total output and employment growth. In a situation where the economy has deviated far from equilibrium, restoring competitiveness is a difficult task, regardless of whether it is done by boosting productivity growth or lowering labour costs. This is why it is important to avoid long-term loss of competitiveness.

Maintaining cost-competitiveness is therefore a well-founded starting point for determining a pace of wage growth that is commensurate with balanced economic growth. Thus, in order to determine whether wage-setting is supporting balanced growth of the economy, factors that need to be considered, in addition to productivity and price developments, include labour costs and the development of the labour share in key competitor countries.

## Productivity and prices as traditional indicators of wage growth

Traditional wage norms are based on the fundamental economic theory that in competitive markets real wages will, in the long term, follow labour productivity growth. According to this line of thinking, wages can increase at the same rate as productivity grows and prices rise, without it affecting employment.

Historically, wage norms in Finland have had a more implicit influence on income policy, as opposed to, for example, Sweden, where the wage norm is more explicit, set by the manufacturing industry exposed to international competition (the Industriavtalet) and serving as the basis for wage-setting in the entire economy and in all other sectors. However, the relationship between real wages and productivity has, to some extent, influenced the discussion on wage-setting also in Finland.

Traditional wage norms are all based on some type of projected sum of productivity growth and inflation. In practice, when wage increases are evaluated against norms that are based on productivity and price increases, three key issues need to be addressed: what concept of productivity is used; is the wage norm set for the entire economy or only the tradable sector; and what concept of price is the most meaningful. The measure used by the Swedish Konjunkturinstitutet, for example, is based on the sum of productivity growth of manufacturing industry and the price of value added in manufacturing.[16]

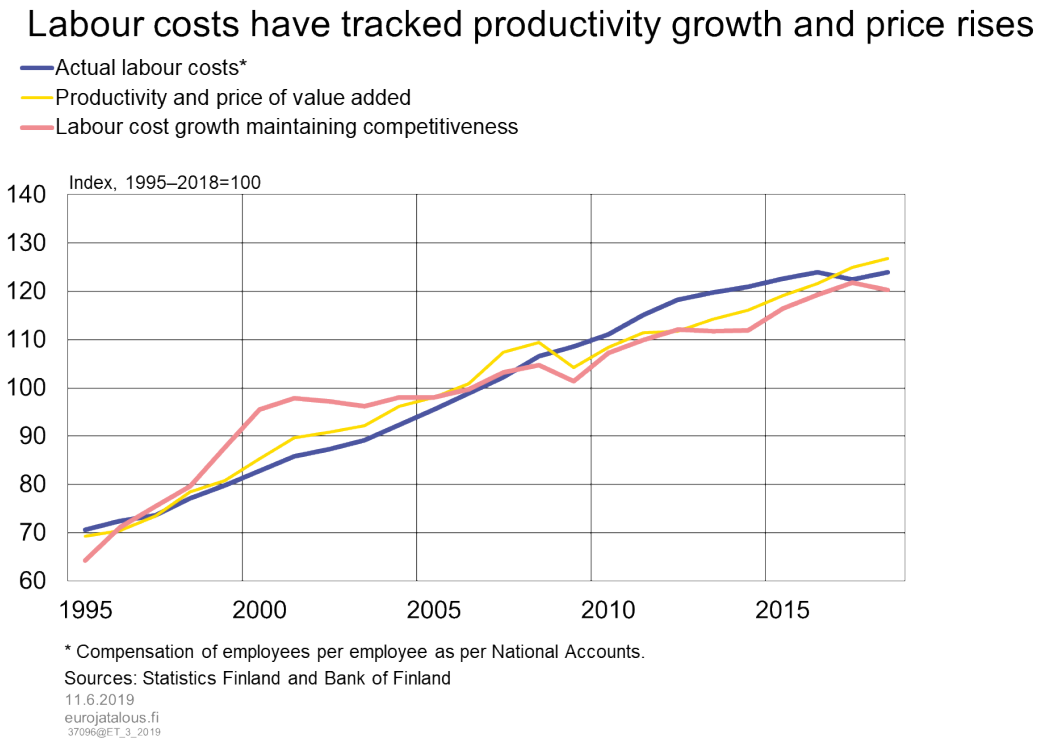
This means that in the simplest norm-based frame of reference, labour costs can rise on average by the same amount as the combined price of productivity and the price of value added, without putting pressure on the labour market. A growth rate of labour costs that is in line with productivity growth and the growth rate of prices is also thought to reflect a growth rate of labour costs that does not undermine the profitability of firms—this is because in the national accounts, profitability is also determined by the difference between productivity and labour costs and the difference between input and output prices. However, this model overlooks the potentially slower development of unit labour costs in Finland's competitor countries and potential appreciation of the euro, which considering Finland's weakened cost-competitiveness, may have a negative impact on the performance of Finnish exports, further affecting jobs and the value added of the entire economy.

## Actual labour cost developments in Finland

Over the long term, labour costs in the economy as a whole have increased roughly in step with productivity and prices, even though the individual growth rates may have diverged considerably in some years (Chart 2a). At the beginning of the 2000s, labour costs did not rise as swiftly as

productivity and prices, and after the financial crisis the opposite was true for a long period. The driving force behind these developments has been productivity in the electrical engineering and electronics industry, which was first exceptionally high and then exceptionally low. It is worth noting how rapidly productivity declined in 2009 when GDP contracted sharply, and that employment fell considerably more moderately. Weak productivity following the financial crisis has partly reduced the potential to raise wages compared with the early years of the 2000s. Prior to the financial crisis, productivity in the whole economy grew at an average annual rate of 2.7%, compared with 0.7% since 2012.

Chart 2.




A key question is whether wage developments are analysed at the level of the aggregate economy or from the perspective of the export industry. The Nordic wage-setting system is based on a generally accepted model in which the export industry sets the wage norm. The justification for the model is that the export industry faces international competition and cannot therefore pass on rises in labour costs to prices. Consequently, the export industry should set a cap for pay rises in the whole economy. In a member state of a monetary union, there may be a specific risk that the non-tradable sector gains 'too much' bargaining power because neither the country's own central bank nor international competition discipline wage setters for excessive wage demands (Holden 2005).

In the other Nordic countries, the tradable sector, i.e. effectively the export industry, plays an

anchor role in wage policy.[17] When Finnish labour cost growth is analysed from the perspective of productivity and prices in the manufacturing industry, it can be noted that productivity, in particular, has fluctuated significantly, while labour costs have developed fairly smoothly (Chart 2b).

Productivity in the tradable sector deteriorated sharply during the financial crisis and declined further in the second phase of the double-dip recession. Export companies' labour costs did not react notably to the changes in productivity. On the other hand, prior to the financial crisis, they rose more slowly than productivity and prices. Because of the sharp short-term fluctuation in tradable sector productivity, it would be difficult to use this measure as a reference for wage-setting, at least on an annual level. Prior to the financial crisis, the average annual growth rate of productivity in the export industry was almost 7%, compared with 3.5% from 2012 onwards.

The brisk growth in the export industry's productivity improved firms' ability to compensate their workforce before the financial crisis. At the same time, the price of value added produced in the sector decreased, having an opposing effect on firms' capacity for labour compensation. These developments can be linked with the distinctive dynamics in the Finnish electronics and engineering industry, which apply also to the price of value added. The prices of electronic products fell for a long period on the back of technological progress, while at the same time the prices of intermediate inputs as a whole rose. The same phenomenon was reflected in the protracted deterioration of Finland's current account in the early years of the 2000s. In 2009–2012, the share of electronic products in total goods exports decreased markedly and the deterioration of the terms of trade came to a halt. Thereafter, developments in the price of value added in the export industry have also been mainly positive.

From the viewpoint of cost-competitiveness, it would be beneficial if wage-setting at the aggregate level supported the cost-competitiveness of exports. However, changes in the export sector's cost-competitiveness are substantial e.g. due to the significant fluctuation of the sector's productivity. From the perspective of macroeconomic stability, the key point is to maintain the cost-competitiveness of exports in the long term, instead of letting the large fluctuations therein influence wage-setting in the short term.

The cost-competitiveness of the Finnish tradable sector deteriorated during the post-crisis years partly because of labour costs in the non-tradable sector rose faster than in the tradable sector. This likely reflects the fact that, after the crisis, the cyclical situation remained stronger in the domestic sector than in the export sector.

Developments in productivity and prices serve as an important starting point in analysing balanced labour cost developments, particularly at the level of the aggregate economy. However,

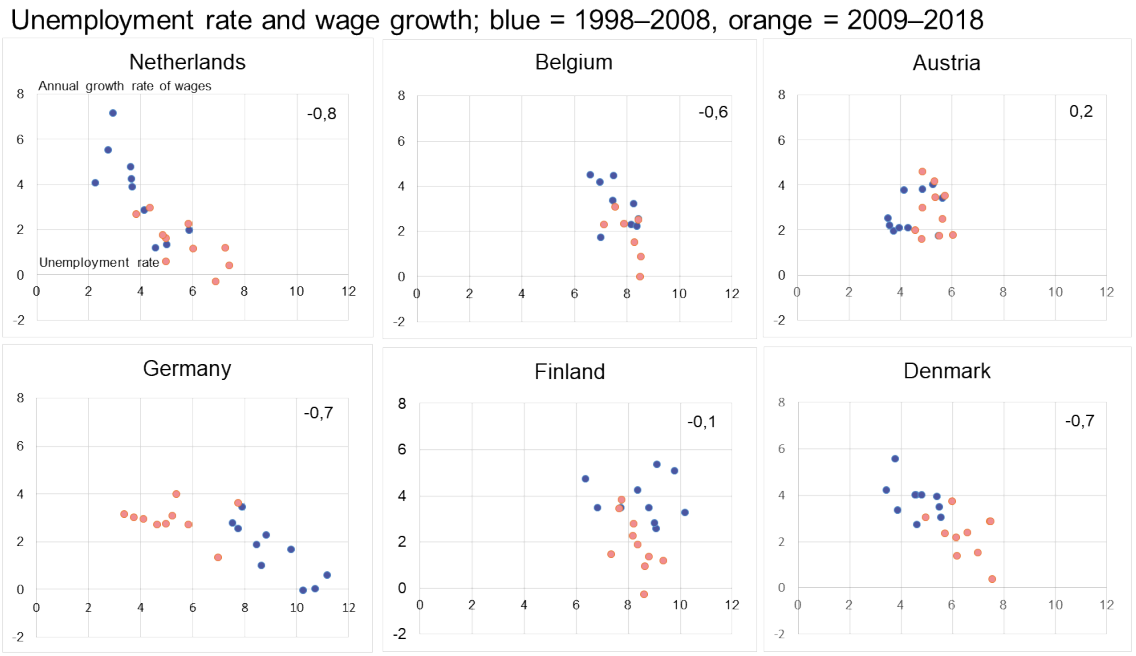
an important caveat to this approach is that it excludes developments in other countries. In an open economy of a monetary union such as Finland, maintaining cost-competitiveness is vital for balanced economic growth. Therefore, besides productivity and prices, the analysis should also cover labour cost developments in other countries and the exchange rate.

## The rate of labour cost growth maintaining cost-competitiveness

Wages and labour costs are decisive – but not the only – components of the main indicators of cost-competitiveness. One such indicator is the relative terms-of-trade-adjusted unit labour costs for the whole economy. This is one of the four key cost-competitiveness indicators used by the Bank of Finland.[18] The relationship between cost-competitiveness and wage-setting can be demonstrated by decomposing cost-competitiveness indicators into their sub-components. It is also possible to calculate a rate of growth for labour costs that holds cost-competitiveness unchanged and compare it with the actual growth rate of labour costs.

The relative terms-of-trade-adjusted unit labour costs for the whole economy, as their name suggests, take into account not only relative unit labour costs but also the terms of trade, i.e. the relationship between export and import prices, in assessing whether labour costs are growing at an equilibrium rate.[19] Finland's terms of trade deteriorated for a protracted period, thereby weakening cost-competitiveness. Since 2012, Finland's terms of trade have improved—in the most recent years even slightly more than in the other euro area countries (Chart 3).

Chart 3.




*) In the upper right-hand corner the correlation between annual wage growth and the unemployment rate.
Sources: Statistics Finland and calculations by the Bank of Finland.
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In the case of the euro area, the divergences in price-competitiveness also largely explain divergences in current account developments, as mentioned earlier. This is why the wage-setting system is important also for the external balance of the economy. Have changes in competitiveness as measured by unit labour costs also influenced Finland's current account dynamics? To what extent has wage-setting affected competitiveness? Kajanoja (2017) analyses indicators of the external balance and finds that they are closely linked to cost-competitiveness.

The relationship between wage-setting and competitiveness, in turn, can be demonstrated by comparing the actual growth rate of labour costs to the imputed growth rate of labour costs that keeps cost-competitiveness unchanged. Over the long term, it appears that average labour costs have risen roughly by the same amount as labour costs maintaining cost-competitiveness (Chart 4). The growth rate of labour costs maintaining cost-competitiveness has been derived from a cost-competitiveness indicator based on terms-of-trade-adjusted unit labour costs. It should be noted that the growth rate of labour costs maintaining competitiveness varies considerably, while actual labour costs have developed fairly smoothly. Since cost-competitiveness indicators may fluctuate even significantly from year to year, they should not be used in drawing very short-term conclusions of whether labour costs developments are consistent with balanced economic growth. Instead, more important is that labour costs developments support the maintenance of cost competitiveness over the long term.

Another noteworthy fact is that actual labour cost developments have fairly closely tracked productivity growth and price rises in the long term. In other words, real wages in Finland have roughly mirrored developments in productivity, rising sometimes faster and sometimes slower.

The third major observation is that maintaining cost-competitiveness after the financial crisis would have necessitated even more moderate growth in labour costs than has actually been the case, despite the fact that labour costs have not risen faster than domestic productivity and prices. This is because labour costs have also risen moderately in other countries, productivity growth has been slower in Finland than elsewhere and, in the past three years, Finland's trade-weighted exchange rate has also appreciated. In other words, besides domestic factors, external factors have also made it more difficult to maintain or improve cost-competitiveness.

Chart 4.




## Changing labour share of income

The relationship between real wages and productivity growth described in economic theory is based on the assumption of production technology remaining constant, i.e. that the labour share of income (wage share, labour share) remains unchanged. However, international evidence over the past few decades points towards a downward trend in the labour share of advanced economies. This can be considered to have negative effects on employees, as economic growth is not fully reflected in labour compensation. On the other hand, a high capital share of income may

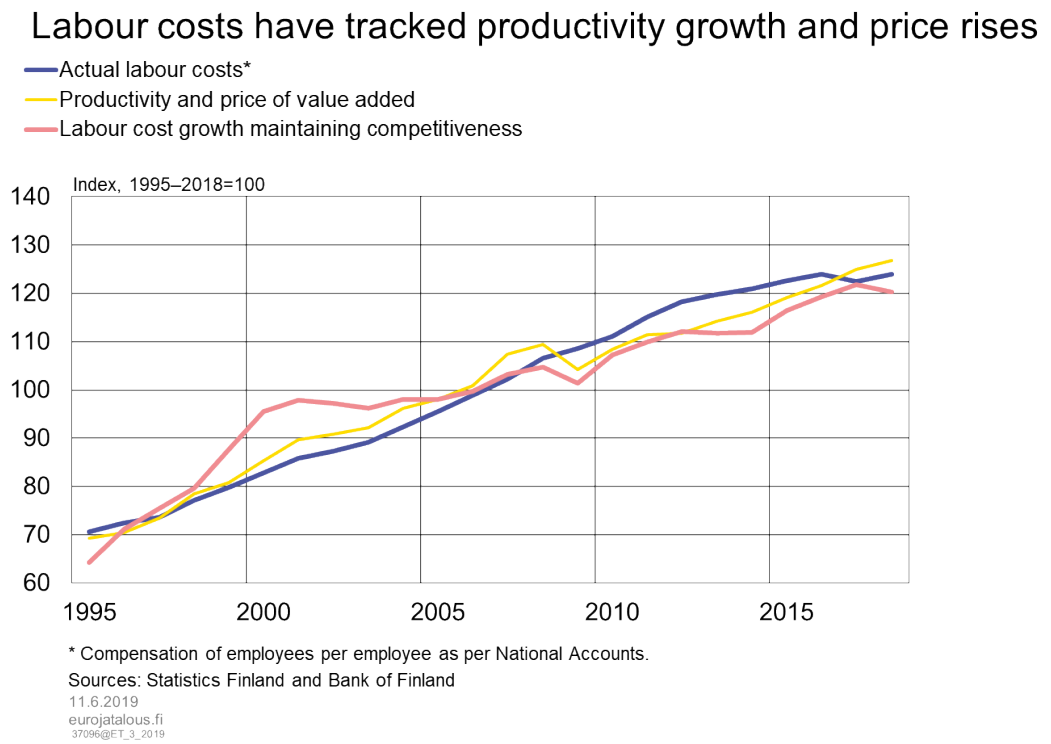
be linked with inequality.

If real wages do not rise in step with productivity in Finland's key competitor countries while Finland strives to keep its labour share unchanged, the Finnish corporate sector's profitability and conditions for employment will deteriorate relative to other countries. This is a further justification of why it is important that the maintenance of cost-competitiveness serve as a reference when assessing whether wage growth is consistent with balanced economic growth. Namely, declining labour shares in Finland's trading partners are directly reflected in cost-competitiveness indicators.

Finland's largest trading partner is Germany, and the euro area accounts for over one-third of Finland's exports. Germany's labour share contracted sharply in the early years of European Monetary Union in 1999–2008, but has since returned back to levels comparable with 1999 (Chart 5). The labour share is also a few percentage points lower now than in 1999 at the whole euro area level. In Finland, the wage share has recovered from the sharp increase during the financial crisis and is currently equal to the figures of 1999.

Short-term variation in the labour share is mainly due to sharp fluctuations in corporate earnings over the business cycle. Hence, the increase in labour shares during the financial crisis is associated with the simultaneous strong contraction in corporate earnings. In Finland, the labour share rose faster than in the other countries, however, and the recovery to lower figures took a long time. The same phenomenon was reflected after the financial crisis as a strong deterioration in the cost-competitiveness indicators. The long-term differences in wage shares between Finland and its trading partners are reflected in cost-competitiveness and, by extension, the framework conditions for wage-setting and economic growth potential. The trend decline in wage shares in many developed countries has been explained by factors such as globalisation and digitalisation, income transfers and taxation, the increasing market power of companies and differences in skills.

Chart 5.




## Wages, cost-competitiveness and employment

The flexibility of wages affects, in the short term, how much unemployment rises during cyclical downswings. According to Schmitt-Grohé and Uribe (2016), short-term adjustment, in turn, has a permanent impact on long-term developments because large cyclical fluctuations are linked with high average levels of unemployment. This is because high demand during booms drives up wages but, due to downward nominal wage rigidity and a fixed exchange rate, real wages do not fall to the level consistent with full employment. As a result, unemployment increases during the contradictory phase of the cycle but does not decline correspondingly during booms. Economic agents understand this mechanism but are too small to prevent inefficiently large wage increases during economic expansions. According to Schmitt-Grohé and Uribe (2016) it would be beneficial for countries with a fixed exchange rate to keep wage growth moderate during expansions because this would alleviate the problems with unemployment that contractions give rise to.

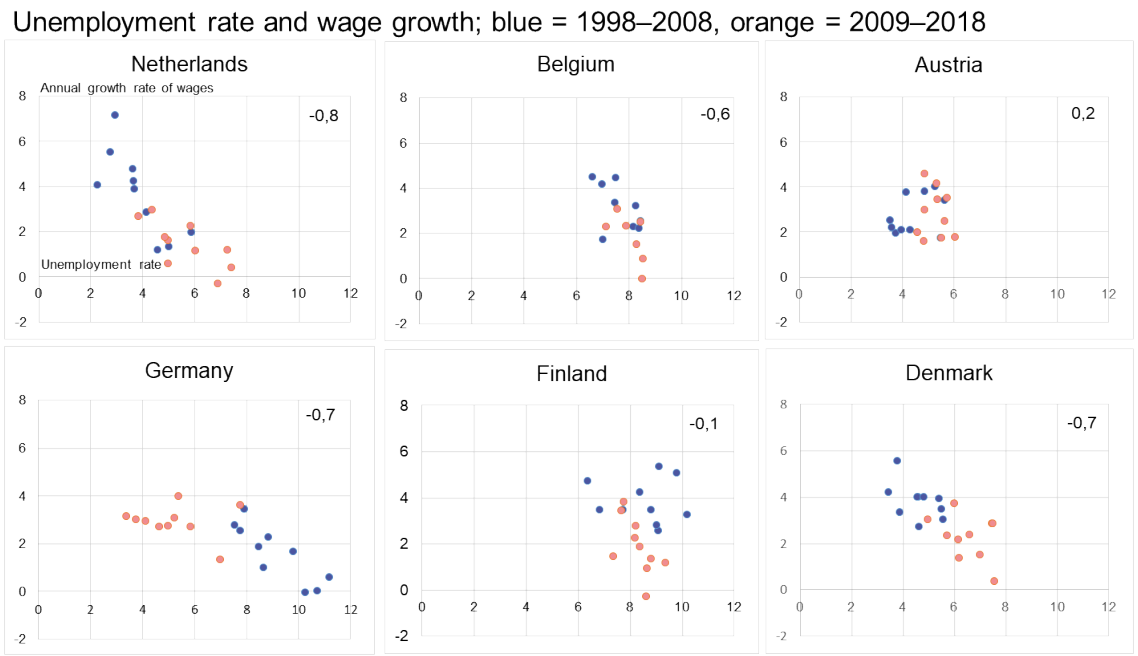
In the long term, if wages grow faster than productivity, this may also be reflected as weaker cost-competitiveness and thereby also as higher unemployment. However, it is very difficult to empirically examine the effects of changes in wages or cost-competitiveness on employment or unemployment in the economy as a whole. Nevertheless, actual changes in wages, competitiveness and employment may give some indication of the links between these factors.

Average wages grew in Finland at an average annual rate of 4% in 1999–2008, but solid productivity developments dampened the rise in unit labour costs. Cost-competitiveness weakened slightly but purchasing power, consumption and employment improved at the same time. Cost-competitiveness deteriorated significantly in 2009, when productivity declined, but labour costs continued to grow at a rapid pace. Unemployment began to rise from 2008 onwards, but wages reacted to this slowly. Wage growth did not abate markedly until 2013.

The link between changes in wages and the unemployment rate has been weaker in Finland than in many other comparator countries (Chart 6). Thus, it appears that wage-setting has not reacted quickly to the changing labour market conditions.

The link between wages and unemployment developments has been particularly strong in the case of the Netherlands (Chart 6). As in Finland, wages grew in the Netherlands also at a rate above 4% in 2008, but thereafter they reacted to the weakening of economic conditions notably faster than wages in Finland.

Chart 6.




*) In the upper right-hand corner the correlation between annual wage growth and the unemployment rate.
Sources: Statistics Finland and calculations by the Bank of Finland.
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# Conclusions

Wage-setting is a key macroeconomic mechanism for employment and economic growth, and in the member states of a monetary union, its importance is even greater. In the short term, wages

largely determine how the economy adjusts to the shocks it faces. In the longer term, monetary-union countries' real exchange rate and cost-competitiveness are fundamentally dependent on wage developments.

The significance of wages as an economic adjustment mechanism depends both on the extent to which wages are actually flexible and the strength of the different transmission channels. In Finland and many other euro area countries, wages are rigid downwards during normal economic cycles. During severe economic downturns, however, adjustment also occurs via wage flexibility. Nevertheless, during the existence of the Monetary Union, the link between changes in wages and the unemployment rate has been weaker in Finland than in many other comparative countries.

If wages are flexible downward during economic downturns, the competitiveness channel increases total demand and dampens the negative impact of the downturn on employment. On the other hand, the purchasing power channel and the real interest rate channel associated with a decline in wages push down domestic demand which dampens the stimulative impact of wage flexibility on total demand. Over the long term, it appears that, overall, the positive impact of the competitiveness channel on exports and GDP is greater than the negative impact of the purchasing power and real interest rate channels on domestic demand. The impacts are also same in the long term, irrespective of whether a country is part of a currency union or not, even though they may be different in the short term.

Experiences from Finland and many other euro area countries show that external competitiveness may weaken for a long time without having an immediate negative impact on economic developments. In the member states of a monetary union, the nominal interest or exchange rate does not react to an excessive rise in costs, and the weakening of competitiveness is reflected in net exports with a delay. At the same time, higher purchasing power and a lower real interest rate boost domestic demand. In the long term, however, weaker cost-competitiveness begins to dampen the tradable sector's operating conditions and, by extension, total output and employment growth. Improving cost-competitiveness in a situation where a country has moved far from equilibrium is difficult, both when boosting productivity growth or lowering labour costs. For this reason, it is important to ensure that competitiveness does not weaken over the long term.[20]

Therefore, it is justifiable to use the maintenance of cost-competitiveness as a starting point when determining a pace of wage growth that would be consistent with balanced economic growth. In addition to productivity and price developments, the analysis should also encompass developments in labour costs and labour shares in major competitor countries. Only then can one draw conclusions on whether wage-setting supports balanced economic growth.

Moderate labour cost developments have improved Finland's cost-competitiveness in recent years. However, cost-competitiveness cannot be said to have reached an equilibrium as yet, even when Finnish labour costs have risen more moderately than domestic productivity and prices. This is explained e.g. by the fact that labour costs have also risen moderately in other countries and that productivity has improved more slowly in Finland than in other countries. Productivity is the basis for long-term economic growth, and productivity growth contributes to creating headroom for companies to compensate for their workforce. Therefore, it would be crucial to improve cost-competitiveness via higher productivity, but productivity can only be affected indirectly and reform measures are slow to take effect. For this reason, wage policy continues to play a vital role in improving cost-competitiveness and the tradable sector's operating conditions.

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# Notes

1. See e.g. EMU Expert Working Group report (1997). ↑
2. In the theory of optimum currency areas (OCA), the other properties are: mobility of factors of production in the area, similarity of cyclical patterns of the countries in a monetary union, and common fiscal policy capacity for risk sharing and the smoothening of business cycles (see e.g. Mundell 1961 and Fleming 1971). ↑
3. According to Blanchard, the other two legs are the banking union and fiscal policy coordination. ↑
4. For an individual small country in a monetary union, the constraint created by the membership is similar to the constraint created by the zero lower bound on the nominal interest rate for a country or area with independent monetary policy. According to Bill and Galí (2019), the zero lower bound typically amplifies the adverse effects of wage flexibility when the central bank is unable to react to downward pressures on wages and prices. ↑
5. According to Galí and Monacelli (2016), an increase in wage flexibility may even reduce welfare in a country that is part of a currency union. The possible welfare-reducing effect may however be due to the very large weight associated with the volatility of price inflation in the model's welfare loss function, and that in their model, unemployment does not contribute to welfare losses. ↑
6. Studies by the International Wage Flexibility Project are based on micro-level data on 16 countries, incl. Finland, from the 1980s and 1990s. ↑
7. The research papers published by the Wage Dynamics Network (WDN) of the European System of Central Banks are based on an extensive survey of European firms. ↑
8. Wage rigidity has been studied in recent years using micro-data for the analysis of wage change distributions (e.g. Dickens et al. 2007). Micro-level analysis is justifiable because aggregate wage growth is less procyclical than the wage growth of job stayers because changes in worker composition have a strongly procyclical effect on changes in wage growth (Kauhanen and Maliranta 2012). ↑
9. Estimations by Sigurdsson and Sigurdardottir (2016) on data for Iceland (1998–2010) show that wage rigidity is affected by the economic environment. Growth in unemployment and a pick-up in inflation shorten the duration of wage contracts. Cuts in nominal wages are however very rare, but strong macroeconomic shocks increase their frequency. ↑
10. Price and cost competitiveness is generally measured by real exchange rate indices, which describe the domestic price or cost level relative to external price or cost levels and take into account the composition of a country's exports markets and changes in nominal exchange rates. ↑
11. This self-equilibrating mechanism is the basis for the "Walters Critique", on which the United Kingdom's decision not to join the EMU was based at the time. ↑
12. Kajanoja (2015). ↑
13. For more details, see Kilponen 2015. ↑
14. Due to the so-called J-curve effect, export price flexibility is more limited in the shorter ↑

term than in the longer term, which is why the effects of cost-competitiveness are reflected in exports with a lag.

15. Kajanoja (2017) describes in detail how cost-competitiveness is linked to the general economic development and how it is measured at the Bank of Finland. ↑
16. For more details, see also Obstbaum & Vartiainen (2015). ↑
17. The tradable sector of the economy refers here to the manufacturing industry, even though at present certain individual service sector entities also export the majority of their production. Based on input-output tables, manufacturing still represents the tradable sector fairly well. ↑
18. For more details on the relevance of the four indicators measuring cost-competitiveness in Finland, see Kajanoja (2017). ↑
19. More specifically, the indicator is computed by dividing total employee compensation by terms-of-trade-adjusted GDP (ULC(tot) = (total employee compensation / (real GDP + exports* (Px/Pm-1)))) and by comparing the resulting unit labour costs in Finland with the respective costs of competitor countries. ↑
20. See also Obstbaum – Vanhala (2016). ↑

## Keywords

adjustment, competitiveness, monetary union, shock, wages