EUROPEAN COMMISSION
DIRECTORATE GENERAL
ECONOMIC AND FINANCIAL AFFAIRS

Brussels, 19/03/2018

WAGE DYNAMICS IN THE EMU

THEMATIC DISCUSSIONS ON GROWTH AND JOBS

TECHNICAL BACKGROUND NOTE BY COMMISSION STAFF

Note for the Eurogroup

1. Introduction and motivation

In September 2017, the Eurogroup exchanged views on how to increase economic resilience in the Economic and Monetary Union (EMU). Economic resilience refers to the ability of countries to withstand shocks and recover quickly to potential.[1] It is particularly important for the euro area, where countries share a single currency and are highly interdependent, and where a lack of economic resilience in one economy can have significant and persistent effects in the euro area as a whole. Ministers agreed that this initial discussion on resilience would guide the Eurogroup's more concrete thematic discussions on growth and jobs in the future.

Wages play a key role in an economy, as a channel for macro-economic adjustment, as a signal that guides efficient resource allocation, and as a fundamental element of inclusive growth. Sound wage behaviour can also support economic resilience, by being a possible channel for macro-adjustment in the face of certain types of shocks. This is especially relevant in a currency union, where other channels for adjustment (such as exchange rate adjustment) can no longer be used. Relative wage differences across the economy can also signal where labour can be put to its most productive use, and hence where labour resources should be allocated. At the same time, wages are crucial determinants of household incomes, and hence of aggregate demand and (inclusive) growth**.**

While economic growth has picked up in the euro area and employment is already surpassing pre-crisis levels, wage growth remains sluggish. Subdued wage growth puts a break on inflation and risks being a drag on private consumption, currently the main driver of growth. Low price inflation can also hamper rebalancing within the euro area by complicating real wage adjustment. These considerations have brought the issue of wage dynamics again to the forefront of policy attention.

This note discusses each of these issues in more detail, and provides a basis for a broader discussion on possible needs for policy action.[2] In what follows, Section 2 reviews recent wage dynamics in the euro area. Section 3 discusses how these wage dynamics matter for the EMU economy. Section 4 provides an overview of what is driving wage dynamics; and Section 5 sets out which instruments policymakers have at hand to influence these.

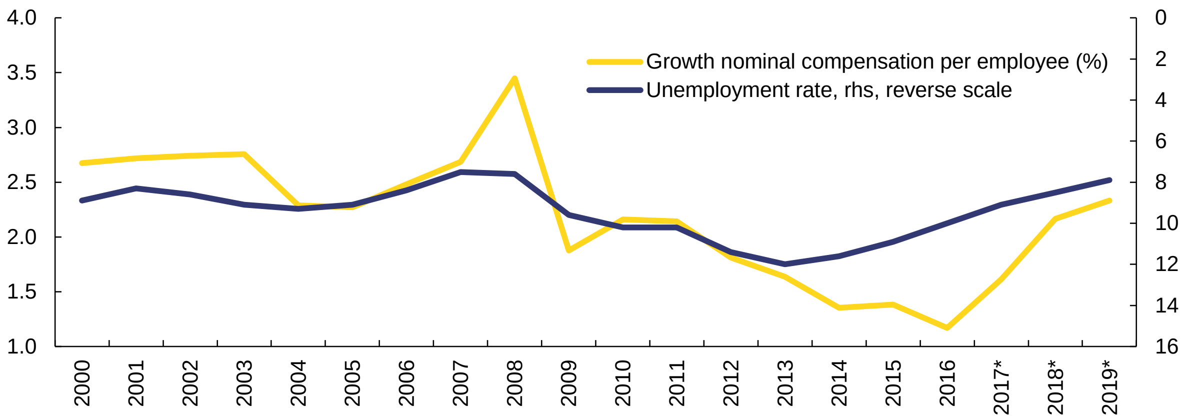
2. Recent wage developments in the euro area

Several studies have observed that nominal wage growth[3] is not picking up as one would expect based on its historical relationship with standard indicators of economic activity and labour market slack. Nominal wages in the euro area are estimated to have grown by 1.6% in 2017, up from a meagre 1.2% in 2016. While wages in the euro area previously tended to move largely in sync with standard indicators of slack such as unemployment or the output gap; wage developments appear to have disconnected from cyclical developments in

[1] EC (2017) Economic resilience in EMU. Note for the Eurogroup. 13 September 2017.
[2] This note draws heavily on European Commission (2018) Wage dynamics in Europe, background note prepared by the Commission for the EPC/EMCO Joint Seminar on Wage Developments and Dynamics of January 31 2018
[3] Measured in terms of nominal compensation per employee.

the current recovery.[4] Nominal wage growth in the euro area is currently around 1 ppt lower than in the past at similar levels of unemployment (Graph 1).

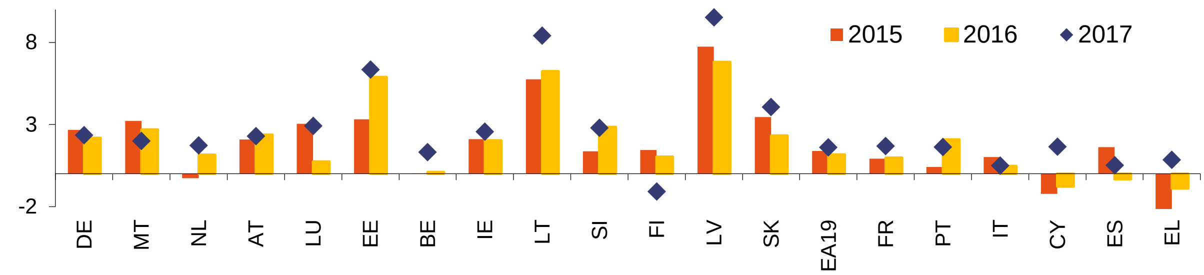
Graph 1: Nominal wage growth and unemployment in the euro area, 2000-2019



Source: AMECO database. Figures for 2017-19 reflect forecasted data. Unemployment figures consider the age group 15-74.

At the same time, there is considerable heterogeneity across Member States, in terms of wage growth and of the conditions underlying wage growth. Strong wage growth was observed in euro area countries which started out from lower levels, notably the Baltic States. This is partly the result of productivity growth, but wages in the Baltics seem to be catching up faster to the EU average than productivity. In most other countries, nominal wage developments remained modest (Graph 2). Nominal wage developments remained particularly flat in those countries where unemployment remains high, notably Greece, Spain, Cyprus, Italy, Portugal, and France. However, also in countries such as Germany and the Netherlands, wage growth was relatively slow in spite of relatively tight labour markets.

Graph 2: Growth of nominal compensation per employee, 2015-2017, annual % change



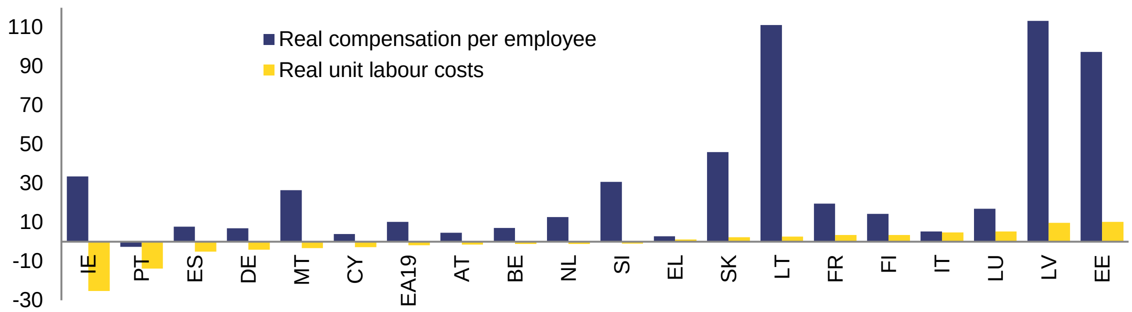
Note: Nominal compensation per employee is calculated as total compensation of employees divided by total number of employees. Total compensation is defined as the total remuneration, including gross wages and salaries (before deduction of taxes and employee social security contributions), employer social security contributions, bonuses and overtime payments, paid in cash or in kind by employers to employees in return for work performed during the accounting period. 2017 figures are partly based on the European Commission's European Economic Forecast, Autumn 2017. Countries are ranked in ascending order of the unemployment rate in 2016.
Source: AMECO database

Over the longer term, while real wage growth has been broad-based, it has not always kept pace with productivity growth. Real compensation is a measure of living standards and purchasing power of workers. It is calculated by adjusting nominal compensation for

[4] This has triggered a debate on the possible flattening of the Phillips curve, where some have questioned whether the Phillips curve is still relevant for monetary policy today.

differences in price levels.[5] Cumulative growth in real compensation since 2000 amounts to 10% on average in the euro area (around 0.6% annually) (Graph 3). The strongest growth was observed in countries starting from the lowest wage levels (Latvia, Lithuania, Estonia), where purchasing power roughly doubled over the considered period. Real wage growth in line with productivity supports sustained firm profitability and sustainable job creation, growth, and underpins increases in living standards.[6] On average in the euro area, real wage growth was slightly weaker than productivity growth over the period 2000-16 resulting in a slight decline in real unit labour costs of 1.7 ppt (Graph 3). The largest gaps were observed in Ireland and Portugal.[7] A smaller gap is noted in Spain, Germany, Malta and Cyprus.

Graph 3: Cumulative growth in real compensation and real unit labour costs, 2000-2016



Note: Real compensation is measured as nominal compensation, deflated with private consumption prices. Real unit labour costs are defined as the ratio of real compensation per employee over GDP per worker (in this case, both deflated with the GDP price deflator).
Source: AMECO

Going forward, Commission forecasts expect that wage growth will pick up slowly over the coming years. Subdued wage growth is expected to continue in the present environment of low inflation and low productivity growth. Remaining labour market slack is expected to recede only slowly, such that wage pressures are likely to remain contained. Inflation is forecasted to remain at 1.5% in 2018 (the same level as in 2017), and to rise modestly to 1.6% in 2019.[8] The latest forecasts on wage growth estimate that nominal compensation per employee will grow by 2.2% in 2018 and 2.3% in 2019 in the euro area, partially supported by productivity growth of 0.9% per year.

3. The role of wage dynamics for the EMU economy

Sound wage behaviour is a key element of well-functioning economies as it supports the process of reallocation of resources, structural change, job creation, and growth. Wages provide signals on the interaction between labour demand and supply and guide the efficient allocation of labour resources. Relative wage differences across the economy can signal

[5] Depending on the purpose of the calculation, private consumer price deflators or GDP price deflators can be used.
[6] Note that real unit labour costs are also a (rough) measure of the labour income share (labour income as a share of GDP), which has a positive relationship with aggregate demand to the extent that the marginal propensity to consume out of labour income is higher than the marginal propensity to consume out of capital income.
[7] The Irish case is particular as its real GDP grew by more than 25% in 2015 as a result of revisions in calculation methods.
[8] European Commission, Winter 2018 (Interim) forecast.

where labour can be put to its most productive use, and hence where labour resources should be allocated. In this way, wage adjustment can support allocative efficiency and steer resources towards areas and jobs with better demand prospects and higher growth potential. This highlights the importance of policy settings that ensure wage developments reflect productivity developments.

Sound wage behaviour can support macro-economic adjustment and economic resilience. Wages play a role in ensuring both internal (i.e. no cyclical unemployment, with joblessness limited to structural unemployment) and external equilibria (i.e. sustainable external positions). Wage growth will be faster at times of low unemployment; and slower at times of high unemployment. This influences incentives to invest and recruit more workers, cushioning to some extent cyclical fluctuations in (un)employment. In the face of a more structural shock,[9] wage adjustment can mitigate the impact on employment, help restore external competitiveness (mostly relevant for the tradable sector)[10] and make domestic production more attractive. This can foster economic growth induced by external demand (albeit potentially at the cost of domestic demand) and help address current account deficits. The degree of optimal wage flexibility may well be limited. Downward wage rigidities can act as a buffer for domestic demand, and mitigate output volatility and deflationary risks under some circumstances.[11] Moreover, stronger real wage growth can support domestic demand, and speed up the recovery,[12] particularly when it is supported by productivity growth, when unemployment is very low and external sustainability is not at risk. To ensure that real wages are not eroded, prices should adjust as well, underscoring the importance of well-functioning and competitive product markets without significant barriers to entry.

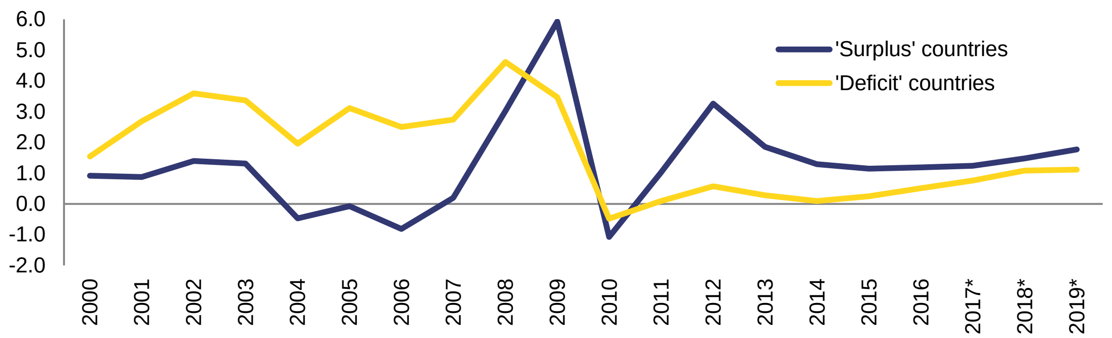
Wages are more relevant as a channel for adjustment in the context of a monetary union. Since currency devaluation is no longer a way to tackle external imbalances and regain competitiveness, the role of prices and wages as adjustment mechanisms to restore both internal and external balances becomes more prominent. This is even more the case when other adjustment channels, such as significant labour mobility, integrated financial markets or fiscal space to cushion certain shocks, are of limited help. In such case, wage adjustment may be even more relevant to support labour demand (at times of weak activity) and strengthen labour supply incentives when the labour market is tight.

Over the pre-crisis period, diverging nominal unit labour cost dynamics have compounded the development of imbalances within the euro area. Nominal unit labour costs (NULC), i.e. nominal wages corrected for labour productivity, matter for international price competitiveness in a currency area. The domestic demand boom that took place in

[9] This applies particularly in the case of a supply shock (e.g. an increase in the oil price or a structural loss of competitiveness). In case of a demand shock, and especially when the economy is in a liquidity trap, wage deflation can exacerbate the contraction.
[10] Duval, R., Vogel, R. (2008) Economic resilience to shocks: the role of structural policies. OECD Economic Studies No. 44, 2008/1; Meyermans, E., Nikolov, P. (2018) Long-term labour market effects of the Great Recession, Quarterly Review of the Euro Area 16(3): 41-56.
[11] Eggertsson and Krugman (2012) have argued that full price and wage flexibility can have a negative impact on output and employment by raising the real value of debt (debt deflation). In policy debates, similar arguments has been put forward especially in the context of minimum wages. Eggertsson, G.B. and Krugman, P. (2012) Debt, deleveraging and the liquidity trap: A Fisher-Minsky-Koo approach, *Quarterly Journal of Economics*, 127(3): 1469-1513.
[12] See e.g. the 2018 Council recommendation on the economic policy of the euro area [for adoption on 22/23 March]

several euro area countries (such as Greece, Ireland, Italy, Spain, and Portugal) in the run-up to the crisis, helped by strong capital inflows, was associated with relatively large output gaps[13] and current account (CA) deficits. It also triggered a higher speed of NULC growth relative to euro area countries with a CA surplus (Graph 4). Losses in competitiveness triggered by high inflation contributed to cooling down the domestic overheating cycles via falling net exports in the countries which already had a CA deficit, but also to growing CA imbalances. In most countries with a CA surplus, wage growth remained low prior to the crisis (and even negative in some years), partly due to a surge in unemployment over the period 2000-2005 in Germany, the Netherlands and Belgium.

Graph 4: NULC in euro area deficit and surplus countries, 2000-2019, annual % change

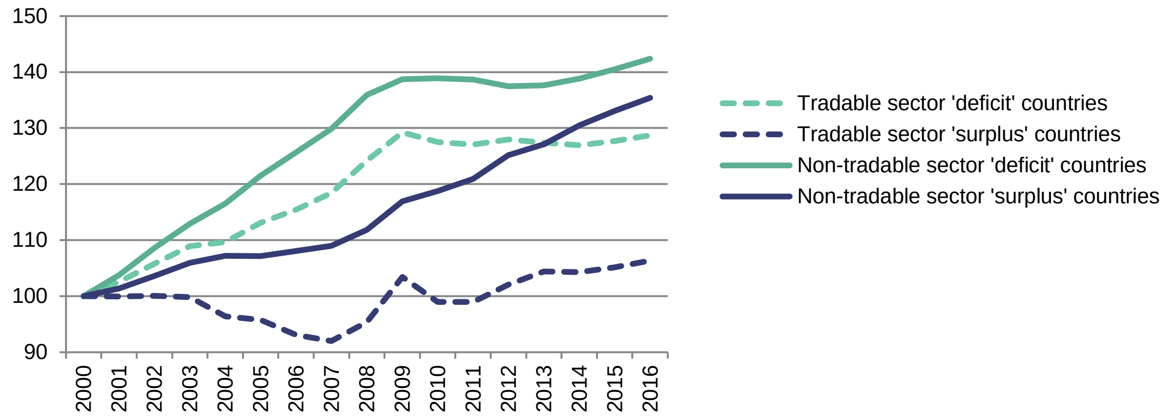


Note: Aggregate NULC growth rates reflect population-weighted averages. Figures for 2017-19 reflect forecasted data. Belgium, Germany, Luxembourg, the Netherlands, Austria and Finland are referred to as 'surplus' countries. 'Deficit' countries are all other euro area Member States. This classification is based on the current account situation around 2008. All surplus countries recorded a current account position balanced or in surplus over the 2000-2012 period (the only exceptions being DE and AT before 2002 and FI after 2010), while all deficit countries recorded a deficit between 2000 and 2012. This grouping of countries is in line with the methodology of the 2018 Alert Mechanism Report.
Source: European Commission based on AMECO.

NULC have grown less strongly in the tradable sector than in the non-tradable sector. This is in line with what one would expect, as tradable sectors are more strongly exposed to external competition, resulting in higher pressure to contain unit labour costs (including by raising labour productivity). More generally, labour costs in the tradable sector matter more for international price competitiveness.[14] On the other hand, non-tradables often serve as inputs to tradable goods; and relative prices and costs matter for sectoral rebalancing. For example, countries with a persistent CA deficit have an interest in shifting resources from the non-tradable to the tradable sector. For this to happen, relative wages and prices should adjust so as to make investment and labour allocation in the tradable sector more attractive. To this extent, wage and price adjustment in the non-tradable sector matter for resilience and rebalancing as well.

[13] Indicating that growth was substantially above its long-term potential rate
[14] Note that beyond price competitiveness, there are also non-price factors which play an important role for competitiveness, such as export quality and institutional competitiveness (i.e. the quality of institutions and infrastructure).

Graph 5: NULC dynamics, tradable versus non-tradable sectors, 2000-2016



Note: Aggregate NULC growth rates reflect population-weighted averages. Countries are classified as in Graph 4.
Source: European Commission based on AMECO

Since the start of the crisis, imbalances have come down, helped by supportive labour cost developments in the countries that had a CA deficit prior to the crisis, although in the recovery period these developments have been less supportive of rebalancing. Since 2011, NULC growth in the countries with a CA deficit has been below that in countries with a CA surplus.[15] Several countries succeeded in turning their current account deficit into a surplus by 2014. Over the crisis period, several policy measures were also undertaken as to address nominal wage rigidities which were seen as potentially complicating the recovery.[16] Yet, their economies remain fragile as a result of negative and large net international investment positions (NIIPs). Less progress was made in terms of reducing large CA surpluses in countries with a CA surplus prior to the crisis. Several of these countries also retain strongly positive NIIPs. More recently, NULC growth has resumed in formerly CA deficit countries. In combination with modest wage growth in the countries which have maintained a CA surplus since the early 2000s, this is slowing down the rebalancing process. Relatively weak aggregate wage growth in the euro area puts a break on aggregate demand growth and price inflation, complicating adjustment of real wages and competitiveness between its members.

These developments have brought the issue of wage growth to the forefront of policy attention. The 2018 Annual Growth Survey and the Council Recommendation on the economic policy of the euro area stress that faster wage growth in the euro area as a whole would help to sustain domestic demand, reduce inequalities and ensure higher standards of living, thereby contributing to the realisation of the fair wage principle of the European Pillar of Social Rights. Similarly, in the context of the European Semester, some countries have been recommended to create conditions to promote higher wage growth, while respecting the

[15] Prices did not always adjust in line with wages. In Spain, Greece and Portugal, domestic inflation declined mostly on the back of lower NULC growth; while profit margins remained resilient. In Italy, NULC growth remained above the euro area average but a significant downward correction of profits was observed. Ireland saw a correction both at the levels of NULC growth and of profits (see Angelini, E., Dieppe, A., Pierluigi, B. (2013) Learning about wage and price mark-ups in euro area countries. ECB Working Paper Series No. 1512).
[16] For example, Cyprus temporarily suspended the indexation of wages to price inflation; Portugal introduced a possibility for firm-level bargaining agreements to prevail on broader collective agreements.

role of social partners. Some observers have called for stronger coordination of (nominal) wage dynamics between euro area Member States.[17]

To support sustainable growth of real wages and living standards in the euro area, raising productivity is key. Productivity-enhancing measures can not only strengthen the supply side of the economy, but also boost demand through increased real wages and higher investments. Examples are reforms that make labour markets more adaptable and responsive in order to improve allocative efficiency, reforms that make product markets more open and competitive, and reforms that improve the overall business environment, with stimulating conditions for firm entry, growth and innovation. Adequate and efficient investment in human capital, research and development is crucial as well. In the context of skill-biased technological progress, high-skilled workers are more likely to reap the benefits from productivity growth.

4. Factors affecting recent wage dynamics

Among the different arguments which have been advanced to explain the observed subdued wage growth, one is the continued presence of labour market slack. Standard economic theory predicts that wage growth will be stronger in tight labour markets and weaker in the presence of labour market slack, as depicted by the Phillips curve. Some have noted that beyond conventional indicators of labour market slack such as the unemployment rate, there are other forms of slack which can exert downward pressure on wages, such as the incidence of discouraged and underemployed/involuntary part-time workers.[18] Involuntary part-time workers currently make out 6.6% of employment in the euro area, as compared to 4.5% in 2007. However, for some Member States, such as Cyprus, Greece, Italy and Spain, the figures are more significant (around 10%), and have more than doubled since 2007.

Low productivity growth is weighing on wage growth. Productivity growth, typically an important driver of wage growth, has been sluggish in recent years. Whereas real productivity per person over the period 2004-2007 grew on average by more than 1% a year in the euro area, this slowed down during the crisis to around 0.1% over the period 2008-2012; to recover to 0.7% on average over the period 2013-2016. The shortfall of investment is likely to have reduced productivity growth during the crisis.[19] More recently, the structure of employment creation may have contributed to low productivity developments, as job creation has been particularly strong in lower-productivity sectors.[20] On the other hand, a decline in labour productivity growth has already been observed since the mid-1990s in the euro area.[21]

Nominal wage growth also reflects past inflation and inflation expectations. Workers account for price developments in their wage demands to protect their purchasing power.

[17] See e.g. Ragot, X. (2017) How to further strengthen the European Semester? In-depth analysis provided at the request of the Economic and Monetary Affairs Committee of the European Parliament.
[18] IMF (2017) Recent wage dynamics in advanced economies: drivers and implications. Ch. 2, World Economic Outlook; ECB (2017) Assessing labour market slack. Economic Bulletin Issue 3, ECB.
[19] European Commission (2017) European Economic Forecast, Autumn 2017. DG ECFIN.
[20] ECB (2015) What is behind the recent rebound in euro area employment? Economic Bulletin, Issue 8, December 2015.
[21] Gomez-Salvador, R., Musso, A., Stocker, M., Turunen, J. (2006) Labour productivity developments in the euro area. ECB Occasional Paper No. 53, October 2006.

Inflation has been low in recent years, not only because of weak wage growth, but also as a result of low energy and unprocessed food prices. Price inflation can have a lasting impact on wages, if inflation expectations are "sticky" and wage negotiations backward looking. Commission analysis shows these factors have slowed down wage growth recently.[22]

The structural downward trend in hours worked per employee contributes to subdued growth of annual earnings. Between 2000 and 2016, annual hours worked per employee declined by 5%. This does not just reflect cyclical conditions; there is also a long-term structural trend towards lower hours worked.[23] Increased labour market participation of women, who work less hours than men on average, may contribute to this observation. However, the reduction in hours worked is also visible for male workers. One plausible explanation is the substitution of work with leisure, facilitated by rising real wages. The structural shift of employment in many economies from manufacturing to the service sector, where part-time employment is more common (and often involuntary), is likely to play a role as well.[24]

While structural labour market reforms can contribute to sustainable job creation and growth, in the short term, they may (temporarily) exert downward pressure on wage growth.[25] Commission analysis suggests that structural unemployment in the euro area has declined over the period 2013-2017 by almost 1 ppt as a result of helped by structural labour market reforms that have been undertaken.[26] This decline has been associated with a small temporary fall in wage growth.

Nominal wage rigidities may cushion wage declines during a crisis and wage growth during the recovery. Employers who were unable to reduce wages in line with soaring unemployment during the recession, may hold back wage increases during the recovery until the "pent-up" wage cuts are worked off by inflation and productivity growth. While most evidence in favour of this argument is based on US data, it is likely to be equally (if not more) relevant for the European context, where the existence of downward nominal wage rigidities has been documented extensively.[27]

Other ongoing structural trends such as technological progress and globalisation are likely to influence wage growth too. If increased integration leads to an expansion of export production, an increase in productivity and/or a decline in price inflation, real wages are

[22] European Commission (2018) "Inflation in the euro area", Note to the Eurogroup Working Group.
[23] See e.g. Alesina et al. (2006) for a longer term perspective, showing that annual hours per employed person were already on a decline in the 1960s.
[24] European Commission (2017: Box I.1.1) shows that the structural reduction in hours worked per employee tends to accelerate during recessions.
[25] Labour economics theory predicts that, under the assumption of imperfect competition, where firms set their prices as a fixed mark-up over their marginal cost and face a downward sloping demand curve in the short run, and workers' labour supply slopes upward, the increase of labour supply at a given wage will have a negative impact on real wages in the short run. In the longer run, however, firms will raise investment in order to take advantage of the cheaper work force (and/or because the central bank lowers the interest rate to bring inflation back to its target), and labour demand will increase proportionally, bringing real wages back to their original level (e.g. Carlin and Soskice, 2006; Borjas, 2006).
[26] See European Commission (2018) as cited in footnote 2.
[27] See e.g. Izquierdo, M., Jimeno, J.F., Kosma, T., Lamo, A., Millard, S., Room, T., Viviano, E. (2017) Labour market adjustment in Europe during the crisis: microeconomic evidence from the Wage Dynamics Network Survey. ECB Occasional Paper 192.

expected to rise.[28] On the other hand, it can exert downward pressure on the wages of workers whose tasks can be offshored more easily by reinforcing workers' exposure to international competition. Some types of workers are particularly vulnerable in the context of ongoing trends such as automation and skill-biased technological progress.

Some researchers highlight the impact of declining bargaining power of workers. Factors that have been argued to weigh on workers' bargaining power include the observed decline in union density and coverage of collective bargaining agreements, the increasing decentralisation of such agreements, and the rising incidence of non-standard forms of work.[29] While these trends are indeed generally observed in the euro area, their impact on wage growth is hard to quantify.[30] Moreover, most of these changes were already observed in the pre-crisis period, so it is not clear that they would be able to explain why wage growth is particularly sluggish in recent years.

Sluggish wage growth has also been linked to the decoupling of wage growth from productivity growth in some advanced economies. Although the empirical evidence on this decoupling is not yet conclusive as it may contain a cyclical component and be subject to measurement issues, the decoupling is attributable either to a reduction in the labour income share or to greater wage inequality (or both). Recent work attributes greater weight to the fact that average wages are growing faster than median wages as a result of high wage growth for top earners. In those countries where a reduction in the labour income share is observed, it appears to be driven by two processes: the increasing capital intensity of production (partly as a result of high capital-labour substitutability for routine tasks), and "winner-take-most" dynamics, where capital-intensive firms with above-average profits are appropriating an increasing market share. This could point at improvements in allocative efficiency. On the other hand, if the increasing concentration of rents results from a lack of competition, it raises important policy concerns. As yet, the available evidence pertains mainly to the US.

5. Policy tools

While the brunt of wage formation results from the interplay of market forces, there are some policy settings that directly or indirectly influence wage developments. A brief overview is presented in Box 1. Since these instruments interact in different ways with the rest of the economy, their effectiveness in steering wage developments and their impact on the rest of the economy varies greatly as well. Country-specificities play an important role in

[28] Carluccio, J., Fougere, D., & Gautier, E. (2015). Trade, wages and collective bargaining: evidence from France. *The Economic Journal*, 125(584), 803-837.

[29] Between the beginning of 2012 and Q2 2017, 4.4 million jobs have been created in net terms of which 29% were temporary contracts and 64% were part-time jobs. At the same time, a high share of non-standard labour contracts among newly created jobs is not unusual by historical standards, particularly in the early stages of a recovery.

[30] IMF (2017) finds that institutional factors such as declining union density and coverage of collective bargaining agreements and the decentralisation of such agreements can weaken workers' bargaining power. Their analysis suggests that automation may have weighed on nominal wage growth, although the impact has been limited. BIS (2017) suggests that the fall in pricing power of workers (stemming from reduced employment protection, union density and union coverage) is weakening wage growth. See IMF (2017, as cited in footnote 12); BIS (2017) 87th Annual Report, Box IV.A: Exploring the wage Phillips curve. Bank for International Settlements, Basel. Note however that the analyses by IMF and by BIS include countries outside the EU, which means that the results are not necessarily driven by EU countries. Moreover, the BIS report does not report detailed regression results, such that the magnitude of the identified impact is difficult to assess.

this regard. At the same time, in the EMU context wage dynamics have to bear in mind the developments in the rest of the euro area.[31] Box 2 provides a few examples of recently implemented policy measures in Member States through which governments have tried to influence wage developments.

Box 1: Policy instruments which influence wage developments[32]

- **Minimum wages:** presence of statutory minimum wages, minimum wage setting frameworks, enforcement, …
- **Institutional settings of collective bargaining frameworks:** level at which collective agreements are concluded, formal/informal coordination mechanisms, provisions on coverage: representativeness of partners, extensions and opt-out clauses from collective agreements, frequency of renegotiation and provisions on ultra-activity, indexation clauses)
- **Public sector wage setting:** through legislative action or collective bargaining, …
- **Tax and benefit policies**: size of the labour tax wedge, generosity of benefit systems, …
- **Other structural reforms in product and labour markets**: non-wage labour costs (e.g. dismissal regulations impacting labour market segmentation), product market regulations (impacting mark-ups), productivity-increasing reforms such as investment in human capital, research and innovation.

The question of which wage setting institutions are most compatible with a resilient economy has no clear-cut answer. From a resilience perspective, the focus is not necessarily on the level of wages but more on the speed of adjustment. Some authors have argued that a combination of national and firm-level bargaining seems attractive to ensure macro-flexibility.[33] Firm-level bargaining allows wages to adjust to firm-specific and local developments. On the other hand, national agreements (in which governments are often involved alongside social partners) can support adjustment in response to major macroeconomic shocks: by providing guidance for average wage growth, it can avert wage deflation while taking into account the interaction between wage developments and (un)employment.[34] At the same time, other efficient forms of wage setting institutions can also be found, and details with regard to how bargaining regulations are operationalized matter a lot. Moreover, collective bargaining institutions are deeply rooted in countries' history and underlying social norms; hence, in order to succeed, trust between social partners might be more important than any particular bargaining structure.

Well-functioning collective bargaining systems also play an important role in mitigating inequality, and ensuring that the benefits from productivity growth are shared fairly.[35] It is important to ensure that wages are set in a transparent and predictable way according to national practices and respecting the autonomy of social partners. In this context, a stable

[31] See also Buti and Turrini (2017) Overcoming Eurozone wage inertia. VoxEU.org, 6 October.
[32] For a more detailed description, see European Commission (2018) Wage dynamics in Europe, background note for the EPC/EMCO Joint Seminar on Wage Developments and Dynamics of January 31 2018.
[33] Blanchard, O., Jaumotte, F., Loungani, P. (2013) Labor Market Policies and IMF Advice in Advanced Economies during the Great Recession, IMF Staff Discussion Note. SDN/13/02.
[34] Examples include the Wassenaar Agreement in the Netherlands in 1982; the Moncloa Pact in Spain in 1977, the Alliance for Jobs (Bündnis für Arbeit) in Germany in 1998; and the more recent 2016 Competitiveness Pact in Finland.
[35] The Right to Fair Wages is one of the 20 key principles of the European Pillar of Social Rights, which was launched on April 26 2017.

industrial relations environment plays an important role in delivering the trust that is needed to adopt, both in good and in bad times, innovative bargaining solutions with the support of the social partners.

Box 2: Examples of recently implemented policy measures that influence wage developments

Germany – introduction of statutory minimum wage in 2015: In order to address the expansion of low-wage jobs, the increase in wage and income inequality, and the decline in the proportion of workers covered by collective bargaining agreements, Germany introduced a statutory minimum wage of EUR 8.50 in 2015 (with some transitory arrangements in place until 2017). The Minimum Wage Commission (*Mindestlohnkommission*) was set up to make recommendations on future adjustments of the minimum wage on a biennial basis, which the government can adopt. The introduction of this minimum wage has boosted wages at the bottom of the distribution, particularly in eastern Germany; while initial fears that it would lead to significant employment losses have not materialized.

Finland – "Competitiveness pact" in 2016: To address the erosion of competitiveness, a tripartite agreement was concluded between the government and the social partners. This involved a temporary wage freeze, an increase in annual working time without additional compensation, and a partial shift of social contributions from employers to employees. Public sector employees saw a temporary reduction in annual holiday bonuses. In compensation, the government reduced taxes and social contributions. The short-term negative impact on public finance is expected to be counteracted by an increase in employment and investment over the longer term. At the same time, structural reforms are being undertaken to raise productivity.

Source: Country Report Germany 2015; Country Report Finland 2017