BUSINESSEUROPE

ECONOMIC OUTLOOK AUTUMN 2019

# EU economy weakens as trade tensions continue

## ECONOMIC SITUATION

- **The EU economy is experiencing an economic slowdown,** reflecting declining global demand and uncertainties due to trade tensions.

- We forecast **1.3% real GDP growth in 2019 for the EU-28 and, 1.2% in 2020.** This entails a significant downwards revision from our June forecast (from 1.6% for 2019, 1.7% for 2020).

- As a consequence of trade tensions, European **manufacturing output is down around 2% from its peak two years ago**. **Whilst strong wage rises and increasing employment are supporting domestic consumption**, this is likely to fall as consumers become more cautious, acting as a **brake on service sector growth.**

- **Substantial risks to the economic outlook are concentrated on the downside** due to the potential for escalation of trade tensions between both the US and China and the US and the EU, which would impact negatively on business, and the uncertainties that persist around a possible no-deal Brexit.

## POLICY CONSIDERATIONS

- It is imperative that policymakers pass **growth-enhancing reforms** to counter the effects of the slowdown and ensure our longer-run prosperity. As our special section shows, further efforts are required to address skills shortages, in particular for many digital professions where **skills shortages** are increasing despite strong wage rises.

- **Leaders can demonstrate their commitment to boosting long-term growth by ensuring that the EU's Multiannual Financial Framework** substantially increases EU funding for areas such research and innovation and transport infrastructure. This needs to be accompanied by a similar focus on productivity-enhancing reforms in member states.

- **The EU must remain open to trade and investment**, while demonstrating that it is able to respond to geopolitical and economic challenges. The EU should endeavour to safeguard the rules-based trade system that has come under strain.

- Further progress is needed to **deepen EMU** and to provide a stable environment for investors. The forthcoming euro area budgetary instrument for convergence and competitiveness (BICC) needs to be enhanced by including the **stabilisation function** proposed by the Commission, the **investment protection mechanism.**

## ABOUT THE ECONOMIC OUTLOOK

BusinessEurope publishes a biannual Economic Outlook that provides business insight into recent and projected economic developments in Europe.

In producing our economic projections and assessing current challenges and developments in the international and regional economy, BusinessEurope works closely with its member federations and draws on their specialist expertise and detailed knowledge of their national economies and ongoing interactions with business.

In particular, our EU28 and Euro Area forecasts are a reflection of the GDP-size weighted economic forecasts from each member state from the economic research departments of our national member federations. Our economic projections are therefore informed by leading country experts with in-depth knowledge and day-to-day monitoring of the economic situation in every EU member state.

### Contact


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|---|---|
| James Watson, Economics Director | j.watson@businesseurope.eu |
| Malthe Munkoe, Senior Advisor | m.munkoe@businesseurope.eu |

## 1. OVERVIEW: THE SLOWDOWN IS SPREADING

Economic growth is slowing in the EU. We forecast 1.3% real GDP growth in 2019 for the EU-28 and even lower, 1.2% in 2020. This entails a significant downwards revision from our June forecast (from 1.6% for 2019, 1.7% for 2020).

This downward revision reflects primarily worsening trade and geopolitical tensions in recent months, leading to considerably worse-than-expected economic performance, in particular in the highly export-oriented European manufacturing sector. Alongside falls in global trade, Brexit and geopolitical events especially in the Middle East have also contributed to heightened uncertainty. Significant uncertainties and risks to the forecast remain on the downside, and our forecast rests on the premise that further escalation of trade tensions and a no-deal Brexit are avoided.

On the domestic front, the main question for the EU economies is how fast and how hard the decline of the manufacturing sectors will manifest themselves through the rest of the economy. Contributions from investments are relatively weak, and while wages are growing and unemployment continues to fall, allowing for greater private consumption, we are also beginning to observe declining consumer confidence and increased saving rates, indicating that domestic demand is likely to weaken going into 2020.

It is imperative that policymakers pass growth-enhancing reforms and ensure our longer-run prosperity. In particular, Europe has been falling behind global competitors in the digital economy, and, as we explore in our special article, companies report that an ICT skills gap is holding them back, which is a problem policymakers should address with a sense of urgency.

**Table 1: Business Europe economic forecast: slowdown spreading in the European economy**

Forecast based on economic analysis from each EU28 member state, aggregated based on GDP relative to total EU / Euro Area GDP

| | EU | | Euro Area | |
|---|---|---|---|---|
| **Main variables** | **2019** | **2020** | **2019** | **2020** |
| **Real GDP (annual % growth)** | 1.3 | 1.2 | 1.1 | 1.0 |
| **Inflation (%)** | 1.5 | 1.6 | 1.3 | 1.4 |
| **Unemployment (%)** | 6.2 | 6.0 | 6.9 | 6.7 |
| **Government net lending (% of GDP)** | 0.0 | -0.1 | 0.0 | -0.1 |
| **Gross public debt (% of GDP)** | 80.8 | 79.5 | 86.6 | 85.1 |
| | **EU** | | **Euro Area** | |
| **GDP components** | **2019** | **2020** | **2019** | **2020** |
| **Private consumption (annual % growth)** | 1.1 | 1.2 | 1.0 | 1.1 |
| **Public consumption (annual % growth)** | 1.3 | 1.1 | 1.2 | 1.1 |
| **Gross fixed capital formation (%)** | 1.6 | 1.1 | 1.4 | 0.5 |
| **Exports (annual % growth)** | 1.2 | 1.1 | 1.0 | 1.1 |
| **Imports (annual % growth)** | 2.1 | 1.2 | 1.2 | 1.3 |

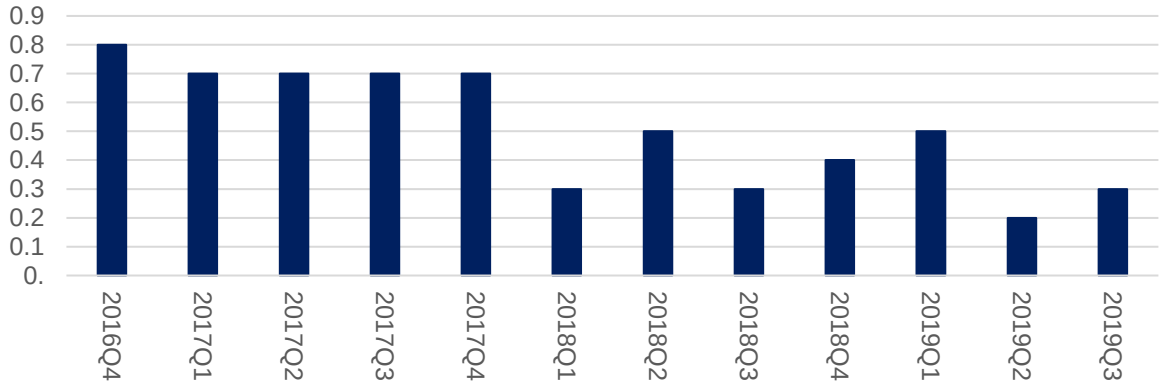
*Source: BusinessEurope forecasts*

## 2. OUTLOOK FOR GDP GROWTH: FUNDAMENTS ARE STRONG, BUT UNDER PRESSURE FROM MANUFACTURING SLOWDOWN

Growth has been on a largely downwards trajectory through 2018 and 2019, (albeit temporarily picking up in the Q4 2018 and Q1 2019), with growth dropping to just 0.2% (quarter-on-quarter) in Q2 2019 and 0.3% in Q3 2019.

**Figure 1: Growth is faltering in Europe amidst heightened trade tensions**

Quarterly GDP growth, real, quarter-on-quarter, EU28

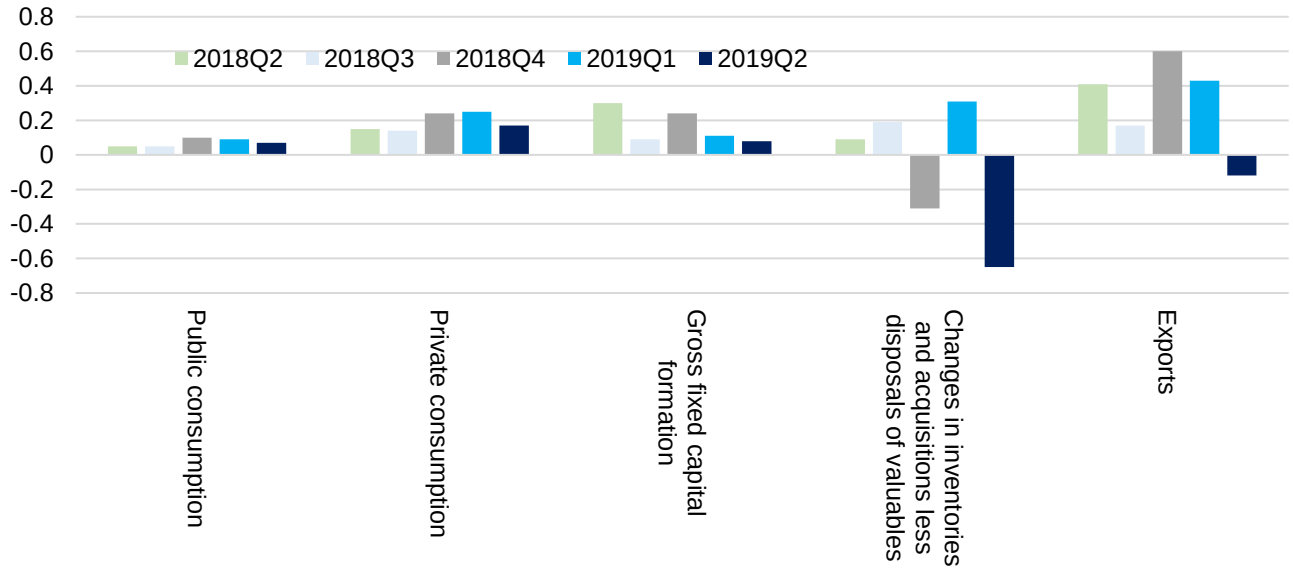



*Source: Eurostat*

In terms of the composition of EU growth, falling exports, having previously been a strong driver of growth, affected growth negatively in Q2 2019, while investments and household spending contributed, albeit weakly, to economic expansion during this period. This reflects that many exporting sectors found themselves in a slump as heightened trade tensions led to decreased external demand.

**Figure 2: Falling exports became a drag on growth in 2019Q2**

GDP growth components, percentage points change from previous quarter



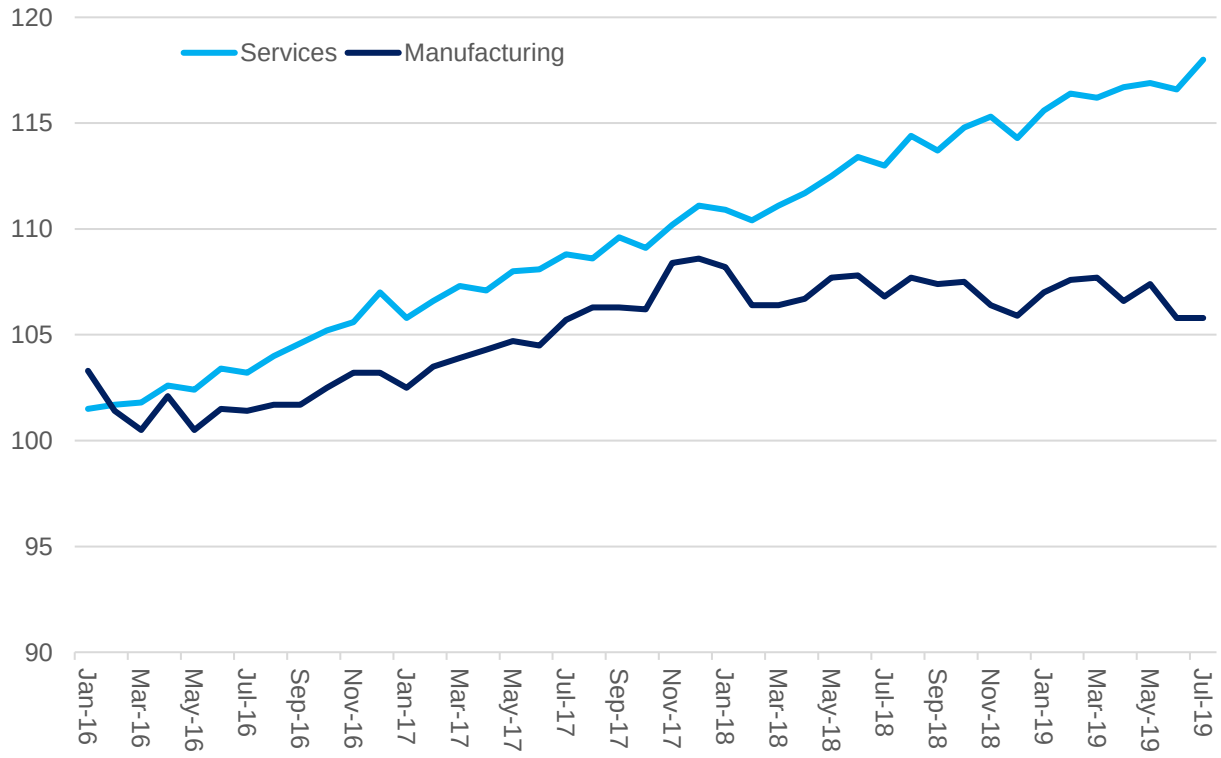

*Source: Eurostat*

## 3. SECTORAL GROWTH: CONTRASTING FORTUNES FOR SERVICES AND MANUFACTURING

Manufacturing output shows clear signs of a rapid slowdown. As shown in figure 3, production was down around 2% in August 2019 (seasonally adjusted) from the peak in late-2017. In contrast service sector production remains unaffected by the slowdown and has indeed increased in recent months.

**Figure 3: Manufacturing output is slowing down, with ramifications for the rest of the economy**

Manufacturing and services output for the EU28, 2016 – 2019, index 2015 = 100

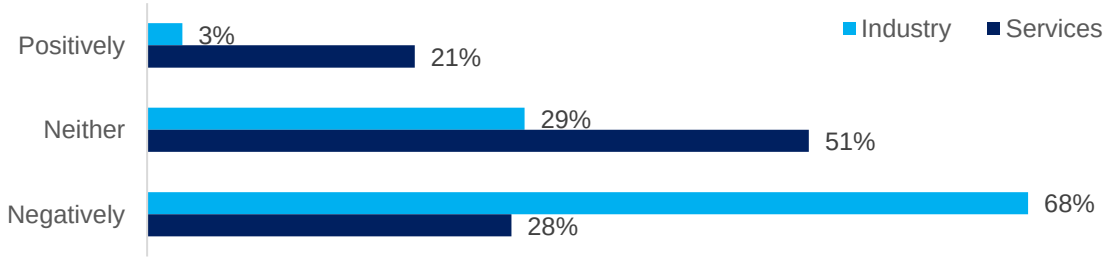



*Source: Own calculations based on Eurostat, index 2005 = 100, calendar days and seasonally adjusted*

Going into 2020 we expect to see effects from the slump in manufacturing to begin affecting the rest of the economy. Specifically figure 4 shows that our members expect the business climate will deteriorate further for manufacturing over the course of the coming 6 months, while the projections for the services sector are much more mixed.

**Figure 4: European business expect continued decline for manufacturing with ramifications for services**

How do you expect the overall business climate in your country to develop over the next 6 months:



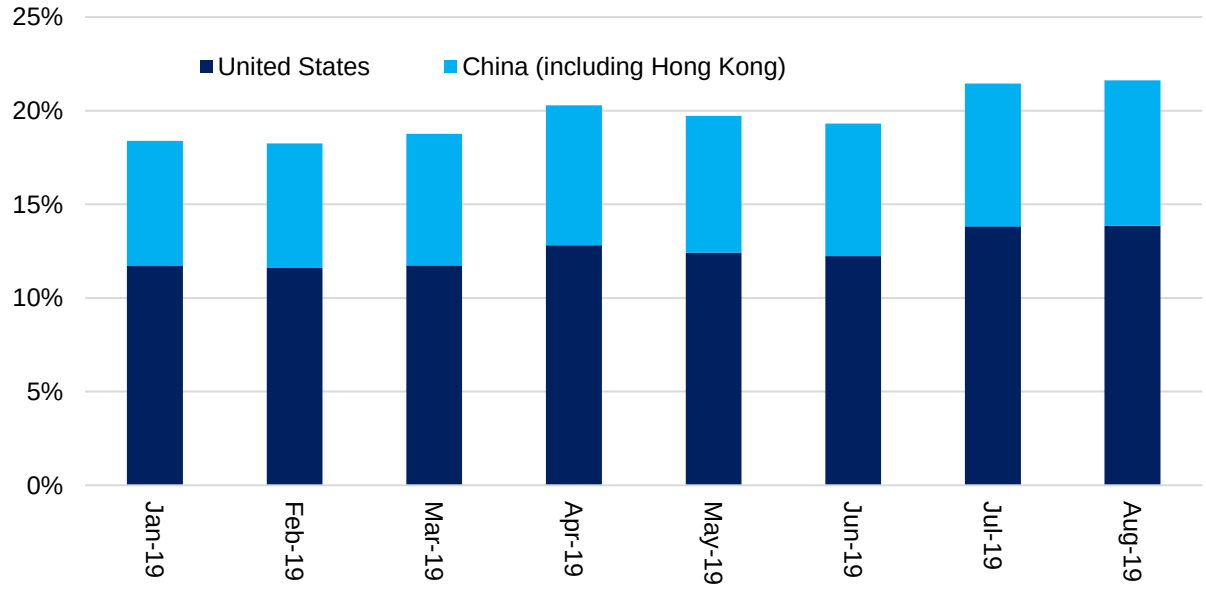

*Source: BusinessEurope, GDP-size weighted figures*

## 4. EXTERNAL DEMAND DECLINING AMID GLOBAL TRADE TENSIONS

Given that around a fifth of EU28 goods exports go to the US and China, as shown in figure 5 below, increasing trade tensions especially between the two largest economies in the world have ramifications for the exporting sector in the European Union.

**Figure 5: US and China account for around a fifth of EU28 exports**

EU28 goods exports, percentage to US and China in 2019

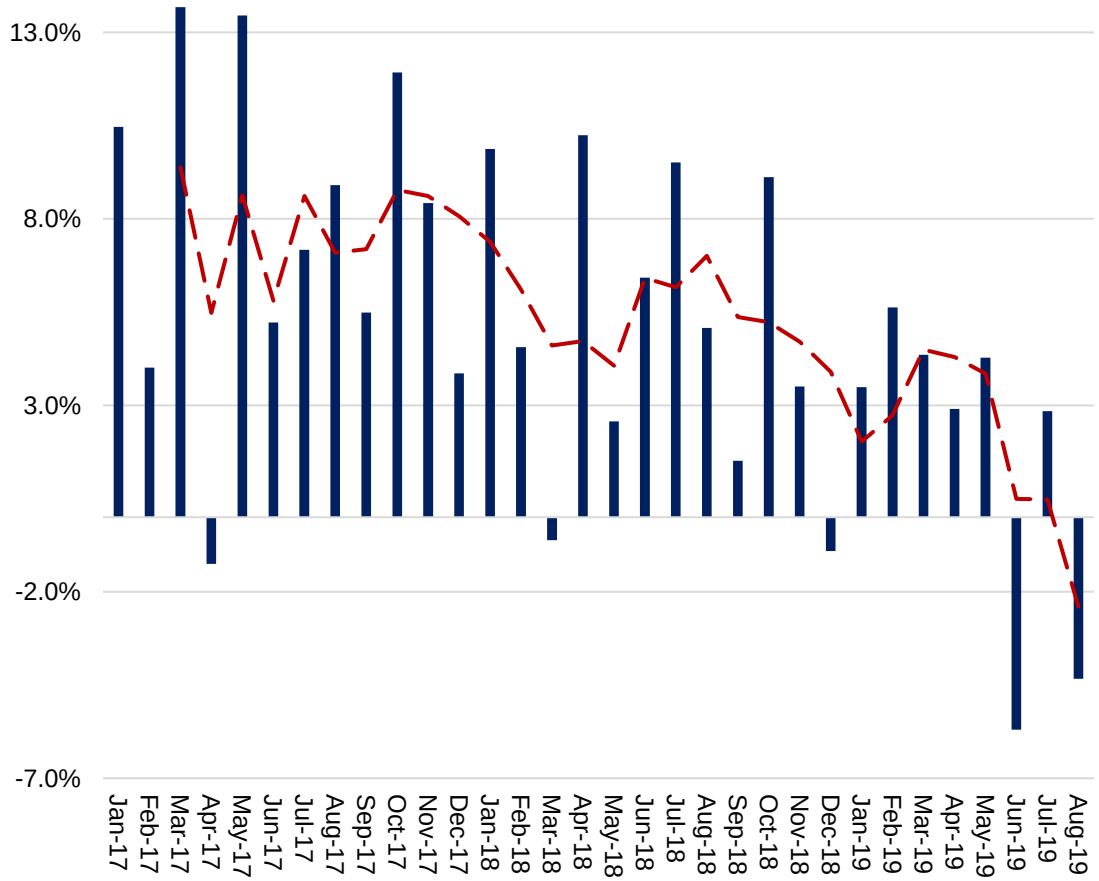



*Source: Own calculations based on Eurostat*

36 million jobs in the EU28 are linked to exports, corresponding to around 15% of all EU jobs, up from 10% in 2000[1], and some of them are at risk as global trade now looks to be receding[2]. Our forecast suggests that exports will continue to grow albeit at a relatively low pace, by 1.2% in 2019 and 1.1% in 2020, a low level, and with considerable risk that further trade escalation can damper European export growth even more.

**Figure 6: Export growth reversal as goods exports are now declining**

Monthly good exports from EU28 countries to non-EU28 countries, change from same month previous year, and 3-months rolling average (red dashed line)




*Source: Own calculations based on Eurostat*

Many businesses have identified heightened political uncertainty as a factor that has affected growth negatively, and also expect a negative impact from uncertainty when looking ahead to the coming 12 months, as shown in figure 7 which looks in detail at the likely impact of a number of key issues on growth.

Whilst US growth is seen as a factor that positively affected growth over the past 12 months, a majority of European business (net 23% of EU GDP) expect it to negatively affect growth

[1] DG Trade November 2018, How Important are EU Exports for jobs in the EU? Based on Arto et al. 2018

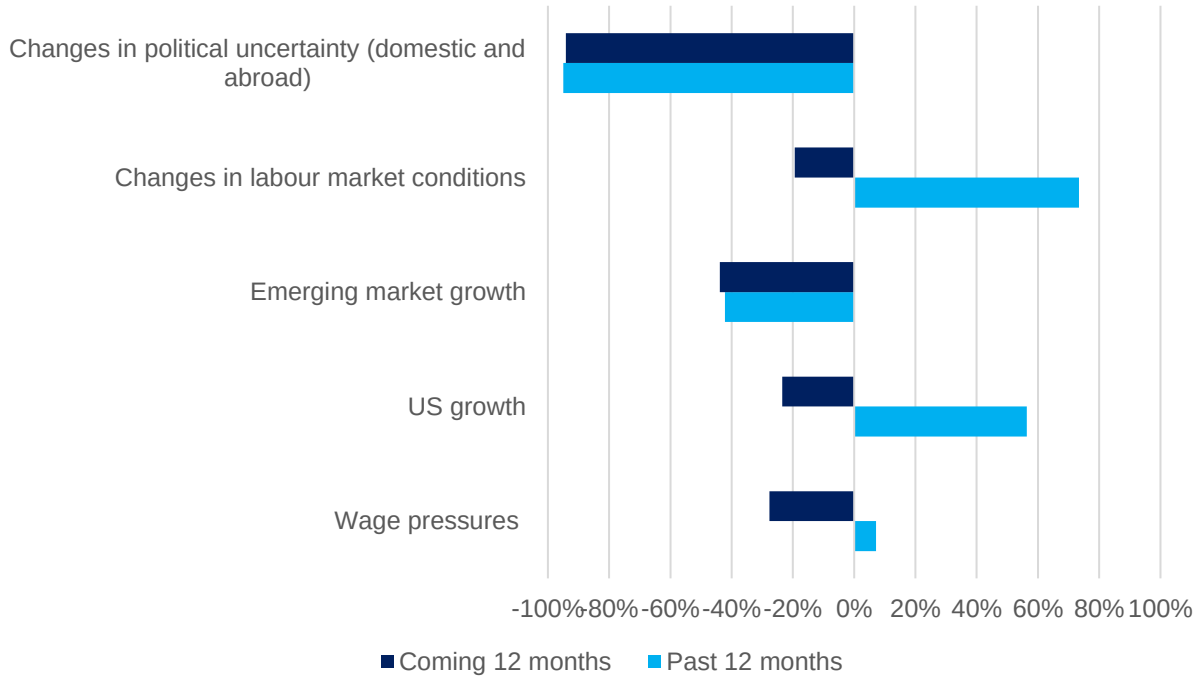
[2] E.g. New York Times October 1, 2019, Global Trade is deteriorating fast, zapping the World Economy https://www.nytimes.com/2019/10/01/business/wto-global-trade.html

going forward. Emerging markets growth – including the Chinese slowdown and the ramifications it has in particular on other Asian economies - was and will remain a drag on growth, according to European business.

Wage development and changes in labour market conditions are also expected by a net majority of European business to be a drag on growth in 2020, indicating a concern that wages may grow excessively due to labour shortages at a time when Europe needs to be focused on maintaining competitiveness as the global economy slows and the European recovery loses its momentum.

**Figure 7: Business sees tailwinds ahead as political uncertainty and decelerating growth negatively affect growth prospects**

How have the following factors affected growth over the past 12 months? How do you foresee they will affect growth over the coming 12 months? Net percentage



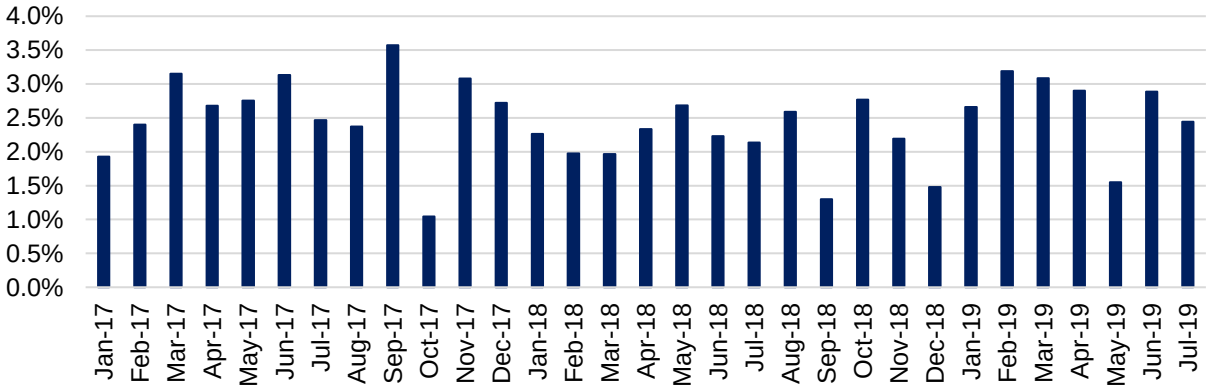

*Source: BusinessEurope, GDP-size weighted figures*

## 5. DOMESTIC DEMAND INCREASING, BUT UNCERTAINTY GROWING

With unemployment continuing to fall and real wages growing, it is not surprising that retail sales and private consumption contribute to economic growth (figure 8). However, as the negative development in the exporting sector and growing uncertainty spread through the rest of the economy these developments may stall or reverse. We are already seeing some indications that consumer confidence and household propensity to consume have dropped, suggesting that domestic demand will not be the same strong growth driver going forward. The festive season will therefore offer an indication of how fast and strongly the slowdown and growing uncertainty impacts on household spending decisions.

**Figure 8: Retail sales have slowed through 2019; Christmas sales will prove important indicator of consumer mood**

Growth in deflated retail sales, quarter relative to same quarter last year, 2017 – 2019, EU28

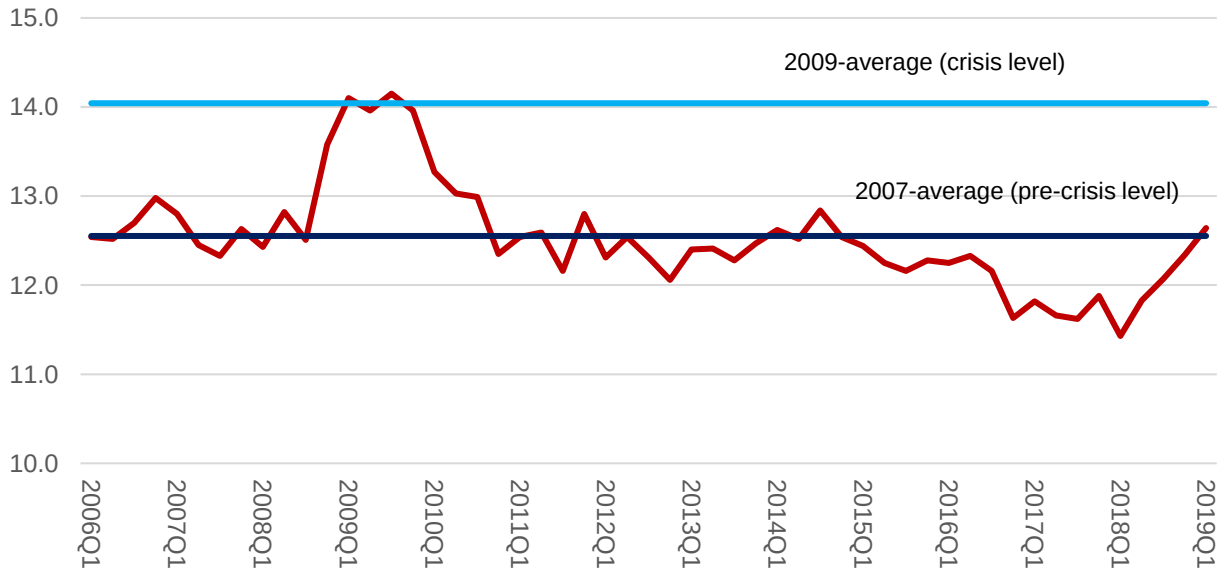



*Source: Own calculations based on Eurostat, seasonally and calendar days adjusted*

Figure 9 shows how household savings have increased over the past quarters, reversing the trend towards lower saving we have seen during the economic recovery. This indicates that consumer propensity to spend is dropping as a result of a perceived deteriorating of the economic situation.

**Figure 9: Household saving rate climbs sharply**

Household saving rate, 2006 – 2019, and pre-crisis (2007) and crisis (2009) averages

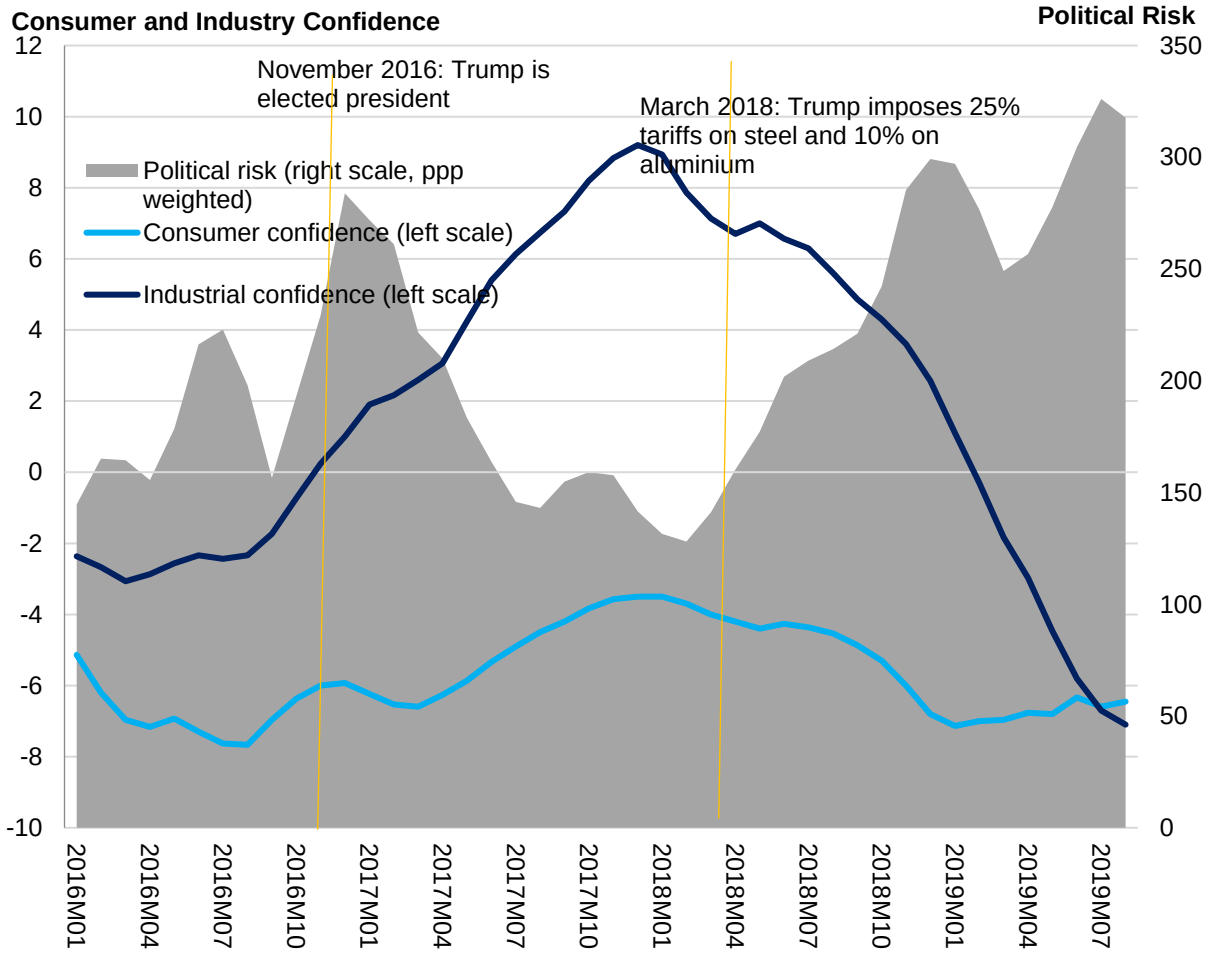



*Source: Eurostat and own calculations*

Figure 10 shows in more detail that the drop in consumer confidence and in business sentiment – most significantly for the manufacturing sector which is shown in the graph – coincide with heightened global risks, reflecting in large parts increased trade tensions. So while domestic consumption continues to support further growth, we are seeing signs of a weakening of consumer confidence that is likely to negatively impact on consumer spending.

**Figure 10: Consumer and business sentiment impacted by rising trade tensions**

Political risks, consumer and business sentiment, and key political events affecting global trade, 2016 – 2019




*Source: Own calculations based on Eurostat, 3 months rolling average, seasonally corrected confidence indicators*

Business sentiment in the EU28 has been on the decline since mid-2019, suggesting that we are at the end of the upturn, and that companies see more troubled times ahead. For example, the Purchasing Managers Index for the Eurozone published by HIS Markit in September came down to its 75-months low, reflecting a dearth in factory orders and a build-up of spare capacity.

## 6. INVESTMENT GROWTH SLUGGISH DURING RECOVERY

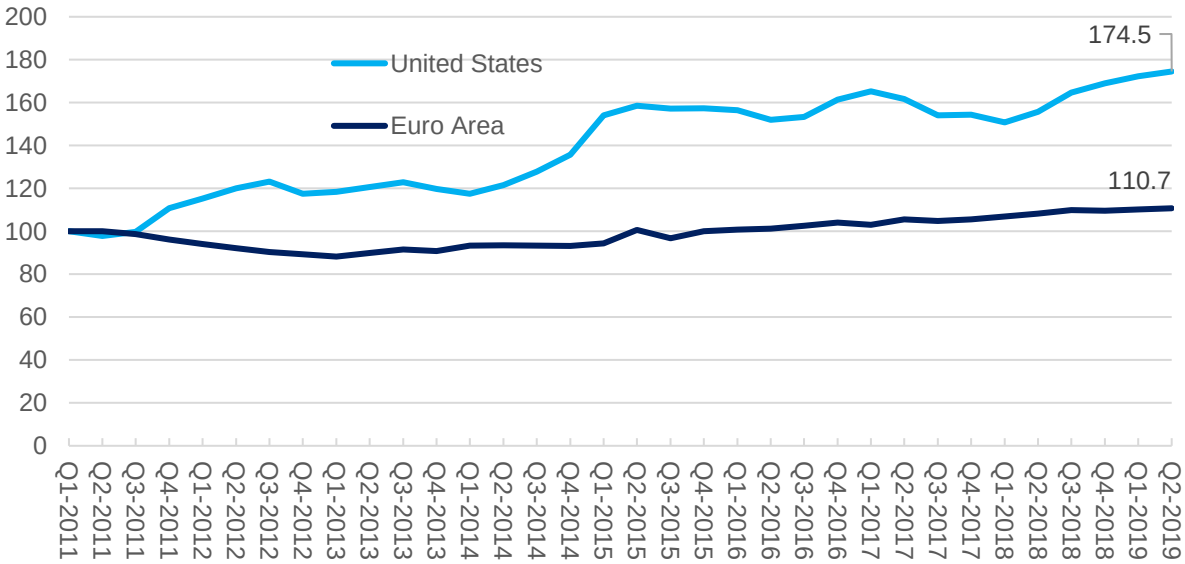
A study from the OECD published in September 2019 suggests that the trade measures taken in 2019 so far will likely decrease Euro Area investments by more than 2% in 2020-2021, highlighting the fact that current tensions have both immediate and longer-term effects by deferring investments and prompting companies to consider amending supply chains.

While investment in the EU has increased during the recovery, as seen in figure 11, the increase in investments has been slow compared to the US. Most worryingly, during the earlier

part of the post-crisis recovery until mid-2018 the EU economies managed to narrow the "investment gap" to the US, but that trend has reversed in recent quarters.

**Figure 11: Investments levels in the EU remain relatively subdued during the recovery and no longer keeps apace with the world's most dynamic regions**

Total volume of the gross capital formation, volume, index 2011Q1=100

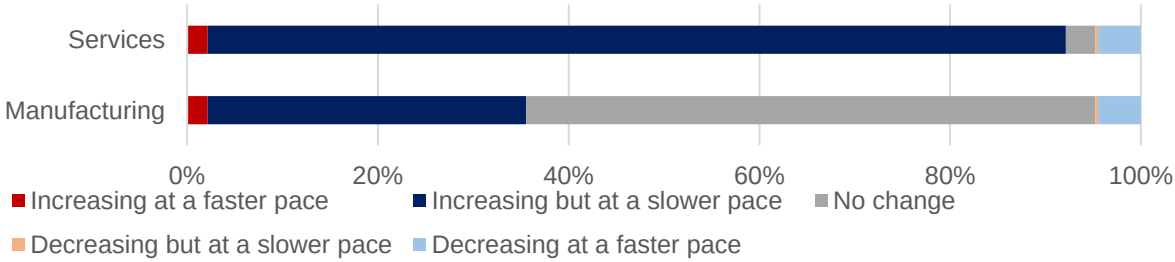



*Source: Own calculations based on OECD and Federal Reserve of St. Louis*

Looking ahead, the expectation among businesses, as noted in figure 12, is that investments will dampen, particularly in the manufacturing sector. Member federations representing more than half of EU GDP indicate they expect investment levels to remain constant in manufacting, and the vast majority expect investment levels in services to keep increasing but at a lower pace. The EU has clearly lost its momentum in terms of increasing investments and bridging the investment gap that has materialized between the EU28 and the US.

**Figure 12: Businesses expect investments to dampen, particularly in manufacturing**

Compared to the last 6 months, what is likely to be the trend in over the next 6 months?




*Source: BusinessEurope member survey (GDP-size weighted figures)*

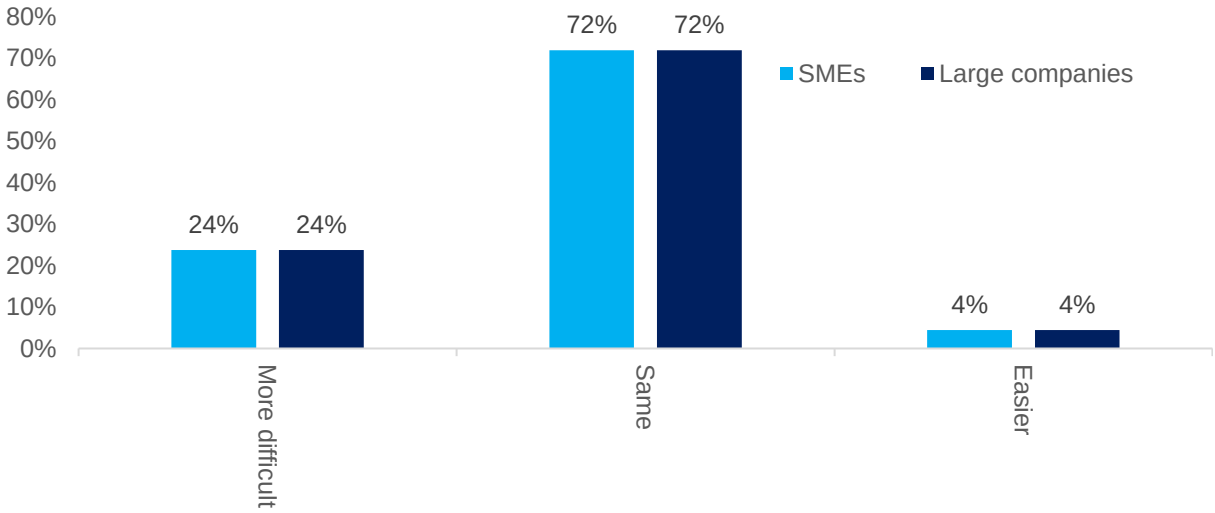
The ECB's Bank Lending survey shows that access to finance is still improving, (albeit at a weaker pace than previously seen), and hence less likely to be a constraint on the realisation of investment plans. In September 2019, net 9% (down from 11% the previous month) of

surveyed companies reported that access to external sources of finance had improved[3] compared to the previous period.

Our own survey suggests that credit conditions may already be tightening, with business federations representing 24% of EU GDP having seen a tightening of the access to finance for companies over the last 6 months, whilst in contrast only 4% of EU28 GDP, on balance, has experienced improved access to finance. This further emphasises the need for policymakers to move forward on financial sector reforms, in particular on establishing Capital Markets and Banking Unions.

**Figure 13: On balance access to finance for European businesses has tightened over the past 6 months**

Member federations were asked to assess whether access to finance generally speaking had eased or tightened in their country over the past 6 months




*Source: BusinessEurope, GDP-size weighted figures*

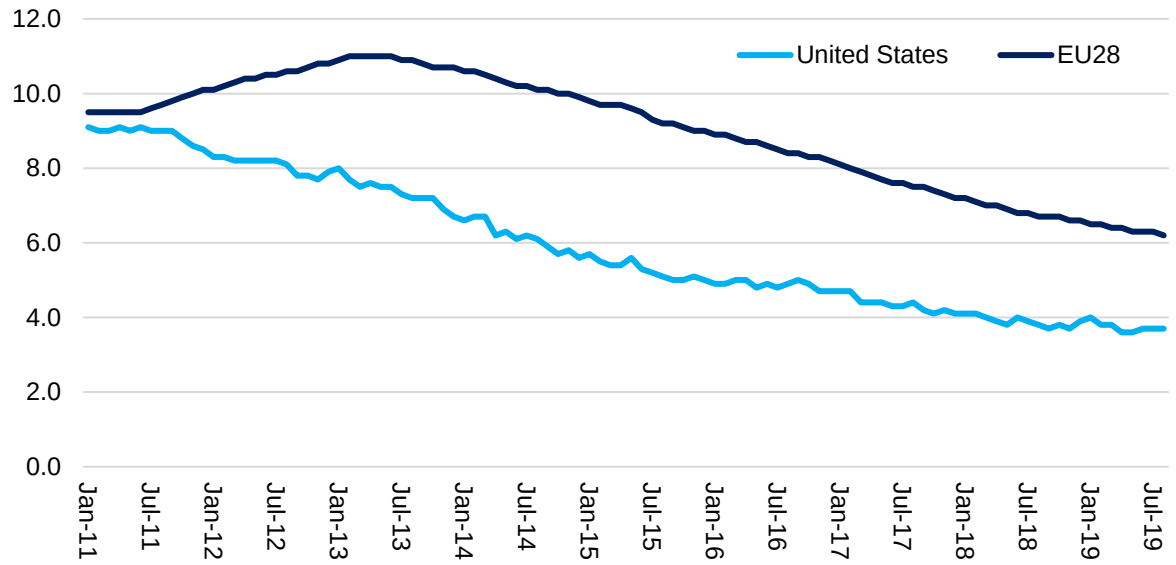
## 7. UNEMPLOYMENT CONTINUES TO FALL, BUT REMAINS ABOVE US LEVELS

Unemployment in the EU has been on the decline since 2013, reaching 6.2% in the EU28 in the summer of 2019. So far we have not seen a clear effect from global uncertainties and lowering growth on the employment situation, and our forecast suggests it will fall further in 2020 down to 6.0%. Nevertheless, as figure 14 indicates, unemployment levels in the EU28 remain well above those in the US, indicating that stronger macroeconomic and structural policies are still required to reduce both cyclical and structural unemployment in the Euro Area

[3] https://www.ecb.europa.eu/stats/ecb_surveys/safe/html/ecb.safe201905~082335a4d1.en.html#toc2

**Figure 14: Unemployment is falling, but remains well above US levels**

Unemployment rate in the EU28 and US, 2016 – 2019

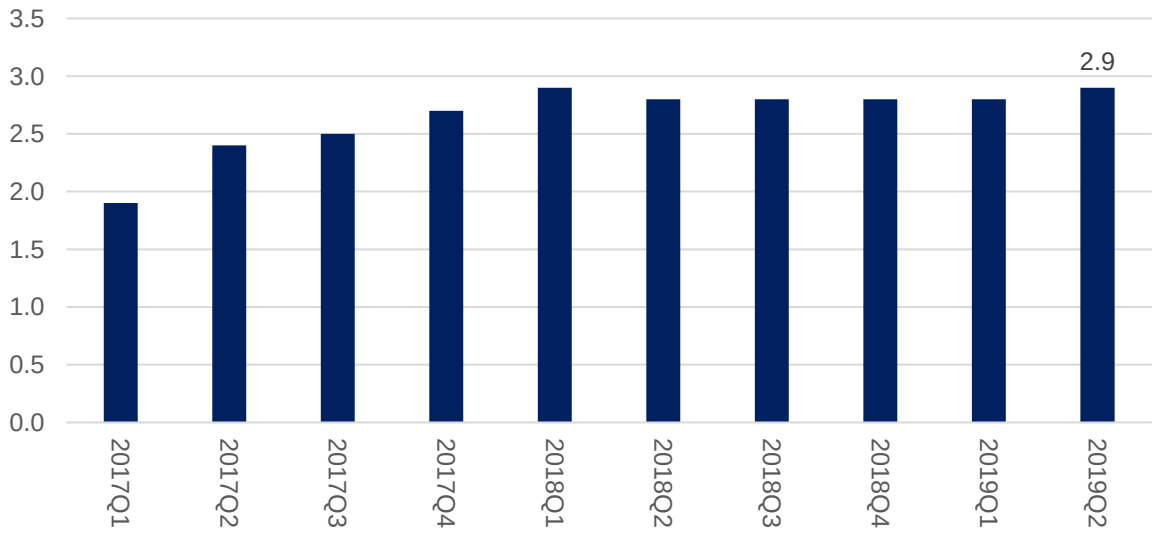



*Source: Eurostat, seasonally adjusted. Percent*

Wage growth (figure 15) has been relatively high and shows no sign of abating so far despite the beginning slowdown, with 2.9% nominal wage and salary increase in the hourly wage in the second quarter of 2019.

**Figure 15: Wages keep rising**

Labour Cost Index, Wages and salaries component, seasonally and calendar days adjusted, nominal, percentage growth



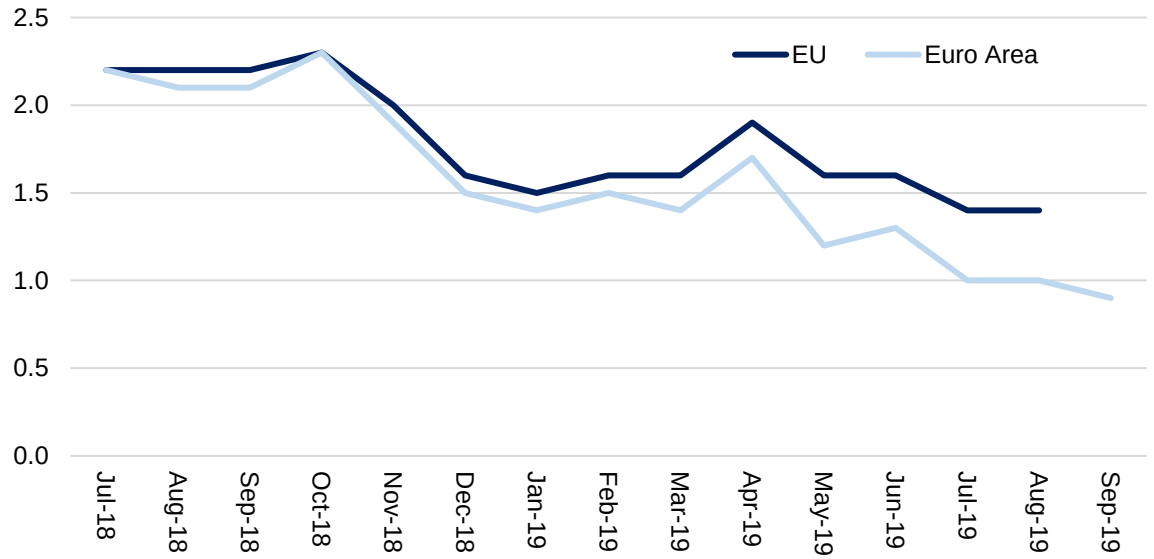

*Source: Eurostat*

## 8. MACROECONOMIC POLICY: PUBLIC INVESTMENT CAN HELP REPLACE FALLING DEMAND IN COUNTRIES WITH FISCAL SPACE

Inflation remains low in the Euro Area and exhibits signs of falling further, rather than converging towards the "close to but below 2%" ECB target. This prompted the ECB to restart its asset purchase programme in September with monthly purchases of 25 bn euro. Taking account of this, we forecast HICP inflation to climb to 1.4% for the Euro Area in 2020.

**Figure 16: Inflation remains stubbornly low in the Eurozone, prompting monetary expansion**

Annual inflation rate, EU and Euro Area, Percent



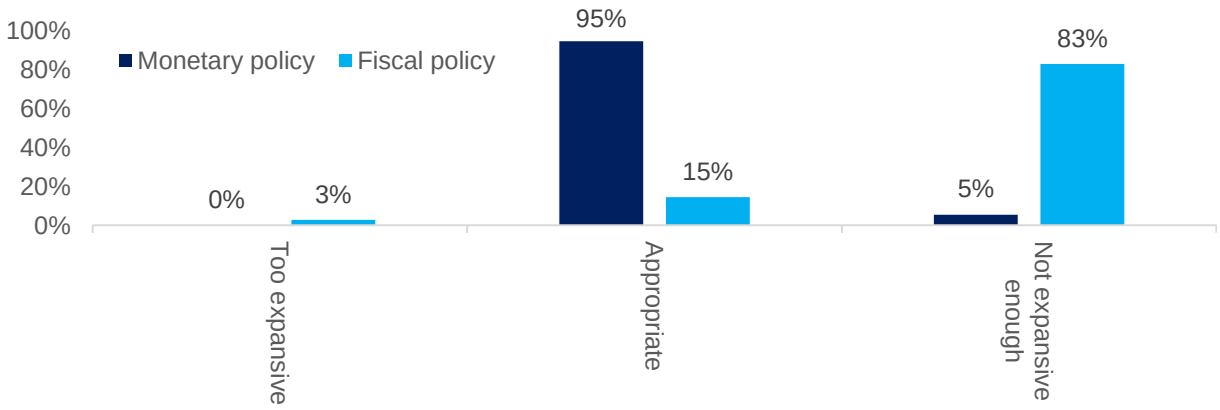

*Source: Eurostat*

As figure 17 below shows, while European businesses are supportive of the ECB's monetary policy stance, the majority of our members believe fiscal policy overall in the EU is not expansionary enough.

Whilst essential that member states respect the rules of the Stability and Growth pact, where appropriate they should also make use of the inbuilt flexibility to support growth-enhancing investment and structural reforms. Similarly, in the event of a downturn, member states should also make use of the flexibility provided for in the SGP to undertake appropriate counter-cyclical fiscal policy.

**Figure 17: European businesses find monetary policy appropriate but identify scope for more expansionary fiscal policy though public investment**

Member federations' views on whether monetary and fiscal policy stances in the Euro Area are appropriate or not



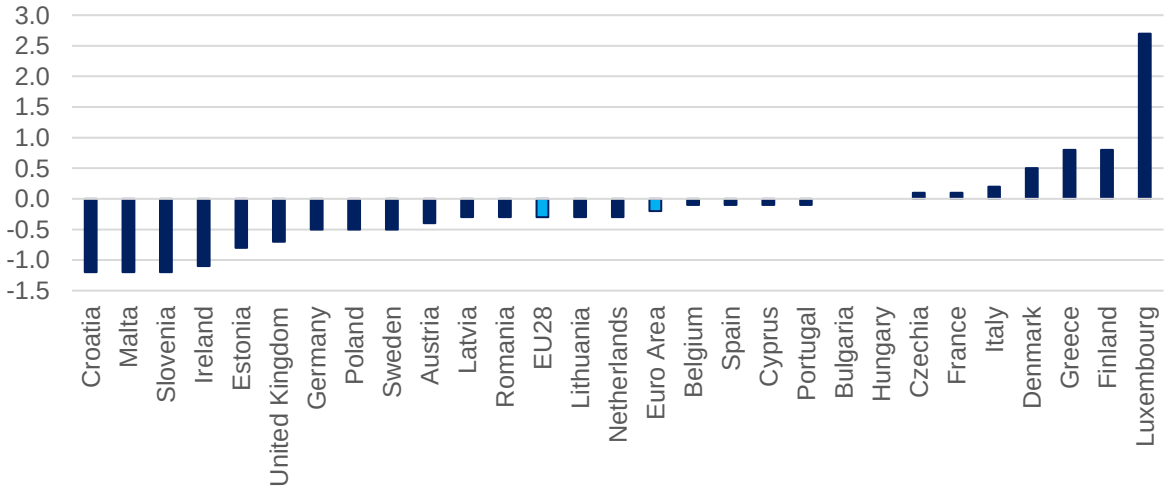

*Source: Member federations, GDP weighted*

## 9. COUNTRY DIFFERENCES

While the general growth trend has been decelerating, substantial country differences within the EU28 remain. Germany has displayed particularly poor economic performance because its globally oriented exporting sector has been very vulnerable to the effects of heightened trade tensions, and is likely to be in a recession when country-level third quarter statistics become available. In contrast, Spain (+0.4%), Poland (+0.8%) and other countries in particular Eastern and Central European continued to experience relatively high growth rates in 2019Q2.

**Figure 18: While still positive in most, growth has slowed down in most EU countries**

Percentage point change in quarter-on-quarter real GDP growth from 2018Q2 to 2019Q2




*Source: Own calculations based on Eurostat*

More generally, the economic situation differs considerably between EU countries, as shown in table 2 below. BusinessEurope member federation forecasts for 2019 and 2020 are displayed in the table below. In particular, while some countries have brought unemployment down to very low levels, others still struggle with relatively high unemployment rates. Despite a long-lasting recovery which may now be petering out many countries still need more growth to ensure the prosperity their economies are capable of fostering.

**Table 2: Economic situation differs markedly between countries**

Percent growth expected by European business in 2019 and 2020

| | Real GDP growth | | Inflation | | Unemployment | |
|---|---|---|---|---|---|---|
| | 2019 | 2020 | 2019 | 2020 | 2019 | 2020 |
| **EU28** | **1.3** | **1.2** | **1.5** | **1.6** | **6.2** | **6.0** |
| **Euro Area** | **1.1** | **1.0** | **1.3** | **1.4** | **6.9** | **6.7** |
| Austria | 1.5 | 1.3 | 1.5 | 1.5 | 4.6 | 4.8 |
| Belgium | 1.2 | 1.3 | 1.5 | 1.6 | 5.7 | 5.7 |
| Bulgaria | 3.3 | 3.4 | 2.4 | 1.7 | 5.0 | 4.8 |
| Croatia | 3.1 | 2.7 | 0.9 | 1.0 | 7.8 | 6.9 |
| Cyprus | 3.2 | 2.9 | 0.5 | 1.2 | 7.0 | 6.0 |
| Czechia | 2.7 | 2.0 | 2.6 | 2.5 | 2.0 | 2.0 |
| Denmark | 1.8 | 1.5 | 1.1 | 1.5 | 4.9 | 4.8 |
| Estonia | 3.0 | 1.9 | 2.3 | 1.9 | 4.9 | 5.9 |
| Finland | 1.1 | 0.9 | 1.0 | 1.1 | 6.5 | 6.3 |
| France | 1.3 | 1.2 | 1.3 | 1.4 | 8.4 | 8.2 |
| Germany | 0.5 | 0.5 | 1.4 | 1.5 | 2.9 | 2.9 |
| Greece | 2.0 | 2.8 | 0.6 | 0.7 | 15.9 | 14.0 |
| Hungary | 4.3 | 2.7 | 3.5 | 3.3 | 3.5 | 3.4 |
| Ireland | 4.0 | 3.4 | 3.1 | 2.5 | 5.4 | 5.0 |
| Italy | 0.0 | 0.0 | 0.7 | 1.8 | 9.8 | 9.7 |
| Latvia | 2.5 | 2.6 | 2.9 | 2.5 | 6.4 | 6.2 |
| Lithuania | 2.7 | 2.4 | 2.5 | 2.1 | 6.2 | 6.0 |
| Luxembourg | 2.5 | 2.6 | 1.8 | 1.6 | 5.3 | 5.2 |
| Malta | 5.3 | 4.8 | 1.8 | 1.9 | 3.8 | 3.9 |
| Netherlands | 1.6 | 1.5 | 2.5 | 1.4 | 3.5 | 3.6 |
| Poland | 4.4 | 3.6 | 2.1 | 2.7 | 3.8 | 3.5 |
| Portugal | 1.9 | 1.7 | 0.3 | 0.6 | 6.2 | 6.0 |
| Romania | 1.3 | 1.4 | 4.2 | 3.7 | 4.1 | 4.0 |
| Slovakia | 3.6 | 3.3 | 2.4 | 2.3 | 5.9 | 5.6 |
| Slovenia | 2.8 | 3.0 | 1.8 | 2.0 | 4.3 | 4.0 |
| Spain | 2.0 | 1.6 | 0.7 | 0.8 | 14.0 | 12.9 |
| Sweden | 1.7 | 1.5 | 1.7 | 1.6 | 6.4 | 6.4 |
| United Kingdom | 1.4 | 1.5 | 1.8 | 2.1 | 3.9 | 3.9 |

*Source: Eurostat, and calculations based off member federation economic forecasts*

Our economic forecast is less optimistic than comparative Euro Area and EU forecasts from the IMF and in line with the OECD, ECB and EU Commission. Notably, we do not forecast growth to pick up in 2020, unlike the IMF and ECB that expect a slight growth rebound. This reflects that we expect a significant effect on non-exporting sectors and on consumers' propensity to spend and save from the manufacturing slump to manifest itself into 2020.

**Table 3: Wide range of forecasts suggest no reversal of slow growth in 2020**

GDP growth forecasts (real, %)

| | BusinessEurope | IMF | EU Commission | OECD | ECB |
|---|---|---|---|---|---|
| **Euro Area 2019** | 1.1 | 1.2 | 1.2 | 1.1 | 1.1 |
| **Euro Area 2020** | 1.0 | 1.4 | 1.4 | 1.0 | 1.2 |
| **EU28 2019** | 1.3 | n/a | 1.4 | n/a | n/a |
| **EU28 2020** | 1.2 | n/a | 1.6 | n/a | n/a |

*Source: IMF October 2019, EU Commission July 2019, OECD September 2019, ECB September 2019*

## SPECIAL SECTION: SKILLS SHORTAGES AND ICT COMPETENCIES

A key theme of the recovery has been growing labour shortages, in particular in ICT occupations. In this section we assess the problem of labour and skills scarcity. Traditional measures of skills shortages are typically based on company surveys. While helpful to consider the depth of skills shortages, especially over time, it does not help us understand the nature of the shortage, and in particular, to what extent demand and supply are responding to such shortage.

We therefore look at alternative measures, particularly wage growth, as well as vacancy rates. We focus our analysis on ICT occupations, an area where businesses have been most vocal in recent months about skill shortages. In addition, we look at supply side responses, notably expansions in education and training provision, as well as noting future projections for demand growth.

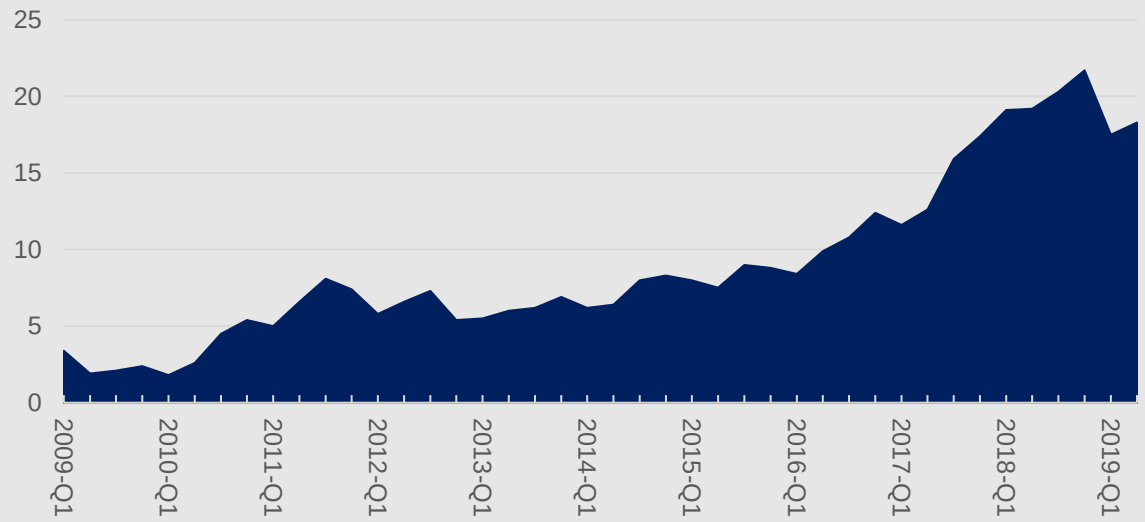
We conclude that whilst businesses have responded with strong wage improvements for many ICT occupations, more needs to be done to ensure training provisions expand effectively, and ensure wage growth remains competitive for more companies. Given wage growth has varied considerable amongst ICT occupations, more attention needs to be paid to the specific ICT skills education and training is focussed on delivering.

Skills shortages are traditionally thought of as a situation such as that set out by the OECD, whereby "employers are unable to recruit staff with the required skills in the accessible labour market and at the going rate of pay and working conditions"[4]. Typical measures of skills shortages are firm-based surveys. Such surveys, such as that by the European Commission looking at labour shortage on production, have increasingly shown in recent years that skills have become an increasing constraint on economic growth.

[4] OECD https://www.oecdskillsforjobsdatabase.org/methodology.php

**Figure 19: Business surveys show that labour shortages have increased following the recovery**

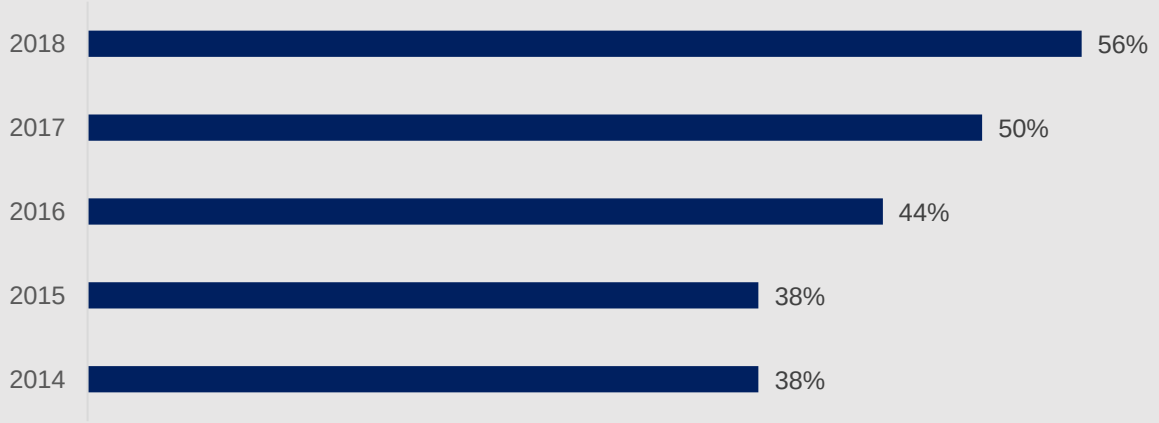
Percentage of EU28 industrial companies that report shortage of labour is factor limiting production




*Source: EU Commission - Percentage of enterprises in manufacturing that report labour shortages are a factor limiting their production, EU28*

Similarly, enterprise-based surveys from Eurostat find that many companies report that it has become "hard" to specifically recruit ICT personnel, as hard-to-fill ICT vacancies have increased from 38% of vacancies in 2014 to 56% in 2018.

**Figure 20: More businesses experience that ICT job vacancies are hard to fill**



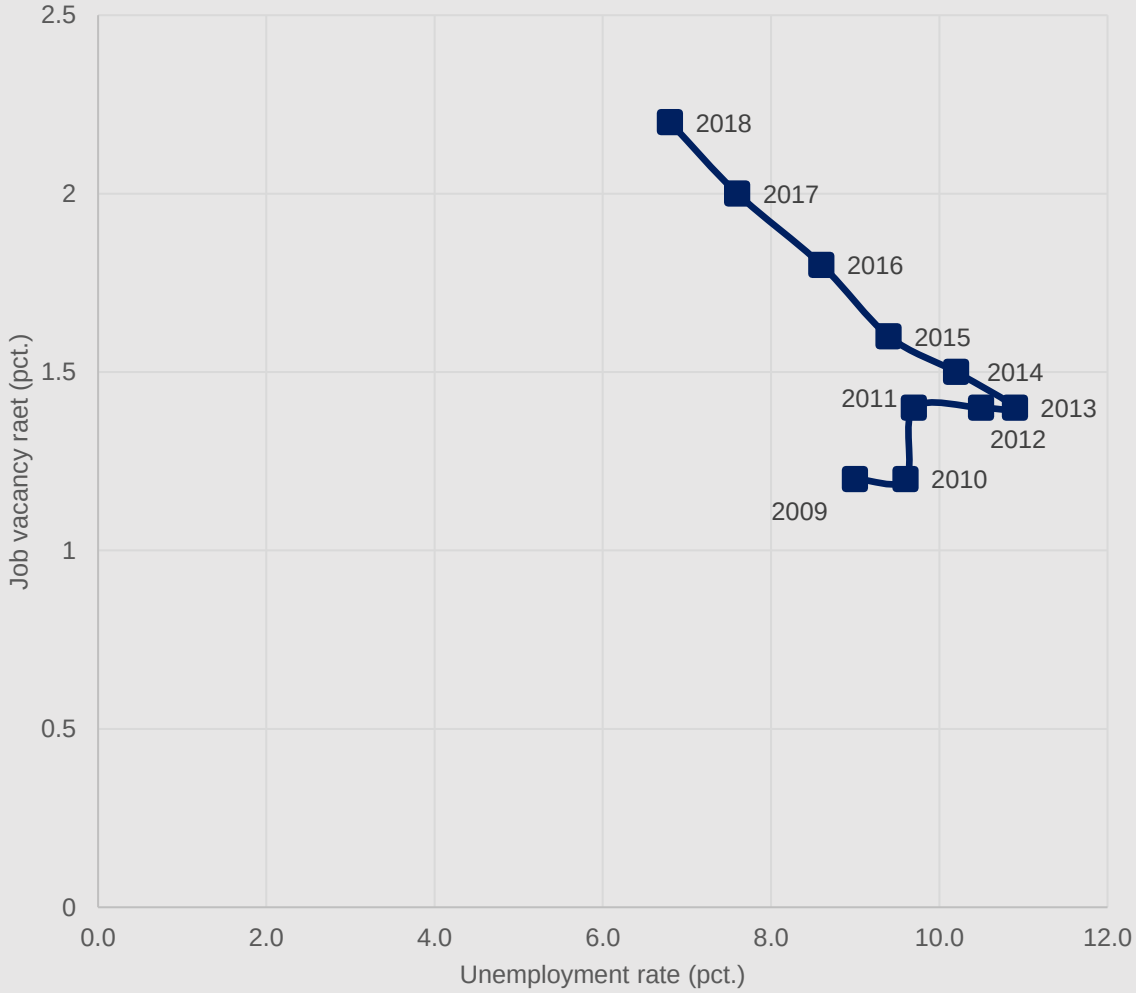

*Source: Own calculations based on Eurostat data - note that the percentage of enterprises that tried to recruit ICT personnel is shown, not the percentage of all enterprises.*

Another approach has been to shift attention from businesses to workers themselves through surveys that ask employees to self-evaluate whether their competencies match the requirements of the job. The logic is that ICT skills shortages should manifest themselves through a high proportion of employees indicating that their skills are insufficient for their

current job. One study from Eurobarometer[5] has found that around a fifth of people employed consider their ICT skills insufficient for the job they currently hold.

Another frequently used indicator of labour shortage is the job vacancy rate. As shown below (figure 21), between 2009 to 2018 the job vacancy rate in the EU has almost doubled, suggesting that filling openings with the right people has become harder. The increase in vacancy rates is to some extent to be expected given that vacancies will normally increase as unemployment falls (a relationship referred to as the Beveridge Curve). However, there is increasing academic discussion[6] that the Beveridge curve may have shifted outward in recent years implying that at any given level of unemployment, vacancies will be higher than previously, a consequence of a less efficient labour market, e.g. poorer job matching.

**Figure 21: Beveridge Curve shows growing labour shortage in the EU28 economies**




*Source: BusinessEurope based on Eurostat*

[5] Eurobarometer 87.1, March 2017 asking a sample the question "To what extent do you agree or disagree with the following statements regarding your skills in the use of digital technologies: You consider yourself to be sufficiently skilled in the use of digital technologies to do your job"

[6] See e.g. Hobijn, B & Sahin, A Beveridge Curve Shifts across Countries since the Great Recession, IMF 2012

The above measures are a helpful starting point to understand skills shortages. But an examination of shortages at any given wage level tells us little about how the market is adjusting, and in particular, the extent to which firms are increasing wages as a means of attracting workers, and in the longer term supporting an increase in supply in a given profession by encouraging others to train. Similarly, official job vacancies may not fully reflect shortages in supply[7], either because companies are dissuaded from seeking to recruit or list job openings in the first place because they realize it will be fruitless or because they rely on informal headhunting or other search methods not factored in official vacancy measures.

With many businesses having highlighted in particular skills shortages in ICT occupations[8], and such occupations clearly experiencing huge increases in demand as a result of increasing application of ICT technologies by businesses, we have focussed on wage development in these sectors. Unfortunately, there is no detailed occupational wage data at EU level[9] and only small number of member states provide such data. Nevertheless, the similarities in the results for the two EU member states for which we show data, suggests that they may be indicative of broader EU trends.

In particularly figure 22 shows that wage growth for various ICT occupations has been uneven in the two countries highlighted. Some highly specialised ICT occupations have seen wage growth well above the national average, such as system architects and designers and software developers. Others such as web designers and IT managers have seen more muted wage growth below the national average. In other words there are considerable disparities between ICT occupations, some of which are in very high demand, whilst others are not.

This is an important conclusion for policymakers, as only an increase in *certain* types or occupations of ICT specialists will help mitigate labour shortages. Conversely, an educational policy response that fails to appreciate the disparity of ICT skills and professions, not all of which are in high demand, may be ineffective or even counterproductive.

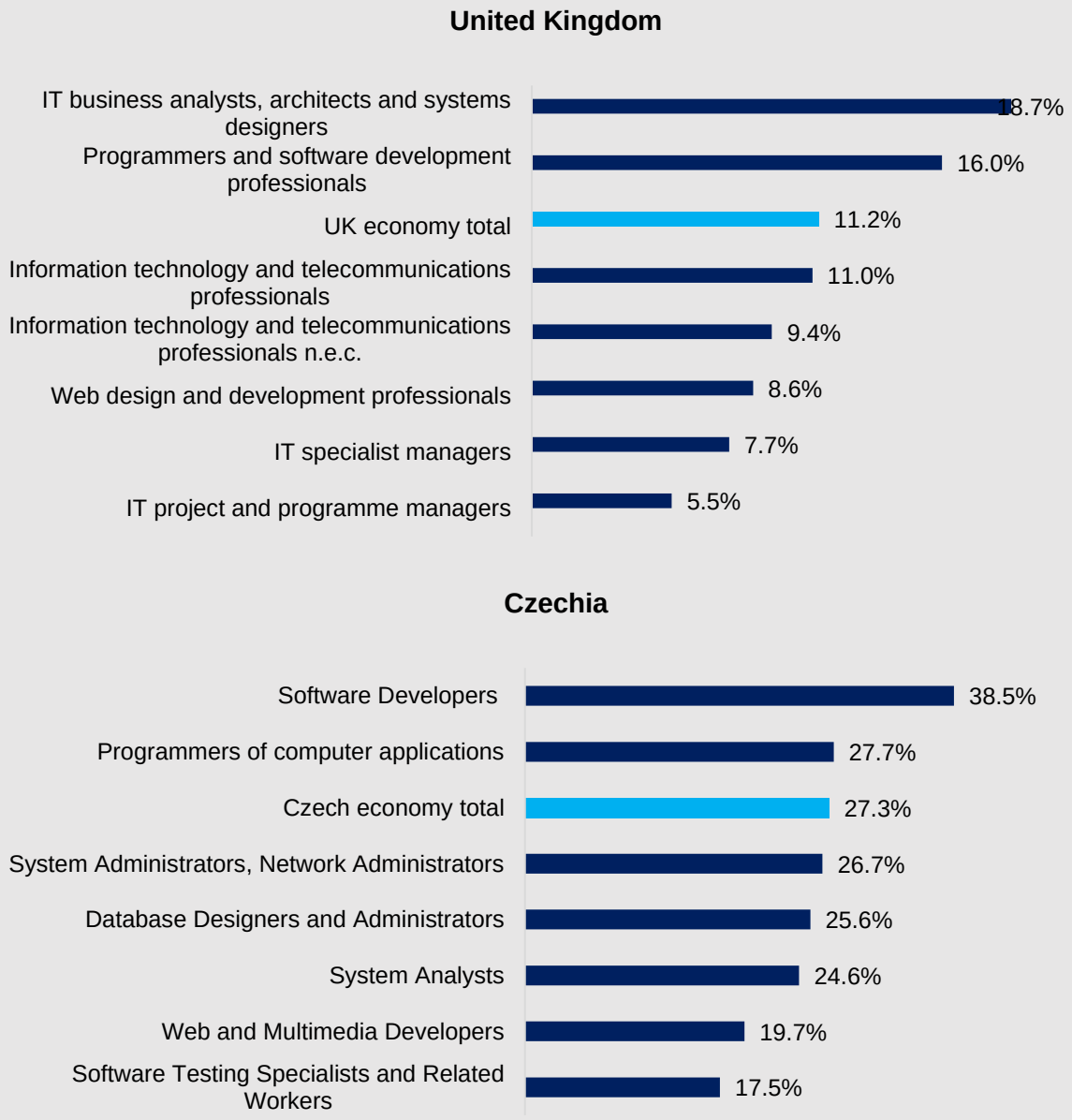
Although corresponding data at the level of occupation for all EU28 countries is not available we speculate that the findings are likely to generalize. We also note that similar results arise when looking at occupational data for the United States (not shown graphically).

[7] See e.g. European Commission, A comparison of shortage and surplus occupations based on analyses of data from the European Public Employment Services and Labour Force Surveys https://ec.europa.eu/social/BlobServlet?docId=17666&langId=en for a good discussion

[8] See for example World Economic Forum March 2019, the digital skills gap is widening, https://www.weforum.org/agenda/2019/03/the-digital-skills-gap-is-widening-fast-heres-how-to-bridge-it/ The European Commission expects around a shortage of 756,000 ICT professionals in 2020 http://www.europarl.europa.eu/RegData/etudes/IDAN/2017/595889/EPRS_IDA(2017)595889_EN.pdf

[9] Data on wage levels and developments at the sectoral i.e. NACE level is publicly available. However, this is unsuited to study wage dynamics for ICT professionals since many ICT professionals are employed outside Information and Communication sectors, whilst companies within these sectors in turn also employ many professionals with different backgrounds such as secretaries and back office staff, salespersons etc.

**Figure 22: Wage data from a number of EU countries suggest that demand for ICT professionals has grown very unevenly between different occupations**




*Source: Own research based on UK Office for National Statistics Annual Survey of Hours and Earnings, and Czech Statistical Office. Nominal wage growth in ICT professions and entire economy from 2012 to 2018*[10]

As demonstrated, businesses have responded to growing skills shortages by increasing wages considerably. Although not sufficient to address shortages, governments and educational institutions have also responded by increasing the intake on STEM (Science,

[10] On data availability, data for sectoral wage developments is not publicly available in all EU member states. While there is publicly available data for sectoral wage developments (e.g. Retail, Construction, Information Technology and Communication), this at best gives only a partial picture, since any sector employs people from a range of professions, while conversely ICT professionals are employed in all sectors of the economy. For instance most financial institutions, many (online) retailers etc. are highly dependent on an ICT infrastructure and ICT professionals to develop and maintain it.

Technology, Engineering, Mathematics) related degrees somewhat. However, the number of graduates with STEM degrees from tertiary education has not risen at a rate comparable to the United States, Canada or Russia[11]. As shown, the absolute number of yearly STEM degree graduates has increased by around 20.000 in the EU, which while positive is ultimately very insufficient to adequately address skills shortages in an economy with roughly a quarter of a billion jobs.

**Table 4: STEM graduates from tertiary education per 10,000 inhabitants, and change from 2013 to 2016**

| | ***2013*** | ***2016*** | ***% change*** | ***Absolute change (rounded)*** |
|---|---|---|---|---|
| Canada | 22.8 | 24.8 | +8.7% | +10.000 |
| USA | 18.4 | 21.7 | +17.8% | +118.000 |
| EU28 | 23.1 | 23.3 | +0.8% | +21.000 |

Own *calculations based on UNESCO, Eurostat, OECD*

The economic recovery has led to declining unemployment rates. At the same time globalization and digitalization have changed and will continue to change what skillsets employers need. For example, although uncertain, the European Centre for the Development of Vocational Training (Cedefop) in its projections of future skills needs notes that "There is a strong correlation between jobs that are anticipated to grow in employment in the next decade and the importance of advanced digital skills within such jobs"[12]. While positive, these developments give rise to skills shortages in the economy.

In conclusion, our study shows first that traditional indicators of skills shortage such as companies survey as well as vacancy rates are all pointing to increasing skills shortages. In addition, there is evidence from the ICT sector businesses are increasing wages considerably for the professions where shortages are most acute, notably some specialist highly-skilled ICT professionals.

However, whilst businesses have responded to skills shortages by increasing wages for in-demand occupations considerably, the response from the educational system has been slow and insufficient to address growing skills imbalances. For example, the US has increased ICT graduate numbers by almost 20% since 2013, compared to only a 1% increase in the EU. A stronger policy response to increase intakes and encourage more young people to pursue degrees in particularly sought-after occupations would be highly desirable.

[11] Note that the difference in growth rates primarily reflect increased enrolment rates in tertiary education in those countries, whilst the fraction of tertiary graduates that pursue STEM degrees has grown more or less uniformly.
[12] Cedefop 2018, Insights into skill shortages and skill mismatch, p 52

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Avenue de Cortenbergh 168 1000 Brussels

Tel: +32(0)22376511

Email: main@businesseurope.eu @BusinessEurope

**WWW.BUSINESSEUROPE.EU**

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