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Economic Adjustment in the Euro Area & the United States during the COVID-19 Crisis

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Mirko Licchetta, Giovanni Mattozzi, Rafal Raciborski and Rupert Willis

Abstract

The COVID-19 crisis was a major economic shock to both the euro area and the United States. The US experienced a larger impact on human health but suffered a smaller economic contraction. Both regions experienced a faster pace of the recovery than during the global financial crisis. In spite of the larger decline in GDP, the labour market in the euro area remained resilient as job retention schemes and other measures have protected employment, while the US saw sharp changes in employment and unemployment and participation rates. There remains also significant uncertainty over the possible impact of COVID-19 on productivity growth. The latest developments should be seen in the context of longer-term trends. Divergence in per capita incomes between the euro area and the US grew after the global financial crisis, with a decline in euro area TFP growth being the most important factor. Despite the employment rate reaching historically high levels in the euro area before COVID-19, it remained lower than in the US, weighing on the relative growth performance. Capital deepening has stagnated in both regions since the global financial crisis, although private investment in the US has proven more dynamic overall. In stark contrast with the period after the global financial crisis, many euro area governments have now delivered substantial public investment, supported by the Recovery and Resilience Facility. Finally, this paper highlights some tentative lessons for the euro area and it puts forward some issues for further research.

JEL Classification: E60, E62, E24, E22, H0.

Keywords: COVID-19, euro area, United States, TFP, Economic Divergence.

This paper was finalised on 15 February and based on the data available at the time (unless otherwise stated).

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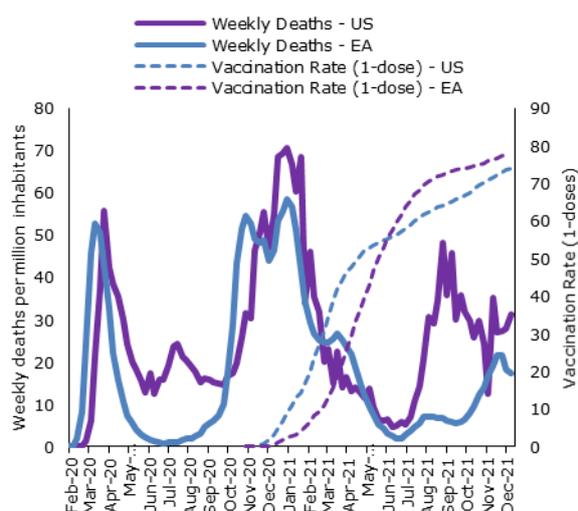
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1. INTRODUCTION

The COVID-19 crisis has profoundly affected both the euro area and the United States. The impact on human health has been bigger in the US, which experienced both higher deaths and higher incidence of infection, in particular during the summer of 2020 and 2021 (Graph 1 & 2). By the end of 2021, confirmed cases in the euro area amounted to around 127 thousand per million inhabitants. This was around 20% lower than in the US, where infections were 160 thousands per million inhabitants.

The start of the vaccination campaign in late 2020 offered the prospect of a return to more normal conditions (Graph 2). In spring 2021, the euro area’s vaccination campaign caught up with and overtook the United States¹. By the end of 2021, the number of people who had received at least one dose of vaccine as a percentage of the total population was around 4 ppt. higher in the euro area than the US. However, uncertainty around future health developments remains high. The surge in COVID-19 cases across Europe in autumn 2021 sent as a stark reminder that COVID-19 has not yet been defeated. In addition, the large dispersion in vaccination rates both across and within the two regions represents a risk to their recoveries.

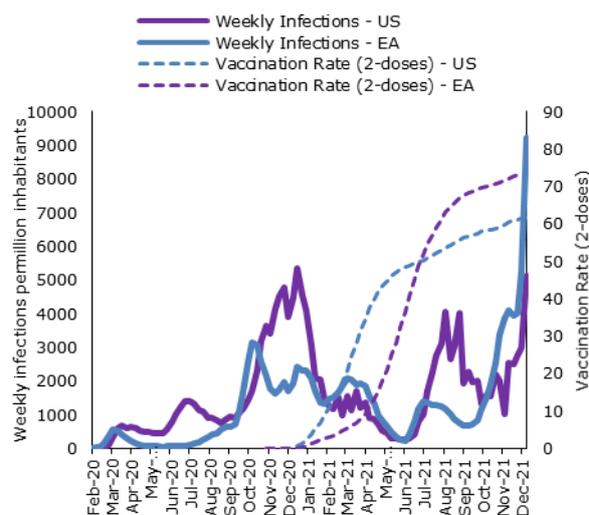
Graph 1: Weekly deaths numbers and vaccination rate (1-dose) in the euro area and the US



Note: Data ends 31 December 2021.

Source: European Centre for Disease Control.

Graph 2: Weekly infections numbers and vaccination rate (2-doses) in the euro area and the US



Note: Data ends 31 December 2021.

Source: European Centre for Disease Control.

The Covid-19 pandemic resulted in a global economic shock, from which both the euro area and the US have rebounded faster than expected. In both regions, the policy response has been bolder and timelier than during the global financial crisis. Although the US suffered a larger direct health impact than the euro area, it has experienced a smaller economic contraction and the pace of recovery has been faster. The employment impact has though been visibly more dramatic in the US than in Europe, despite the smaller fall in US GDP.

¹ On the need to better anticipate public health risks and enhance contingency planning see EU Commission, 2021, “[Emerging stronger from the pandemic: acting on the early lessons learnt](#)”, 15 June 2021.

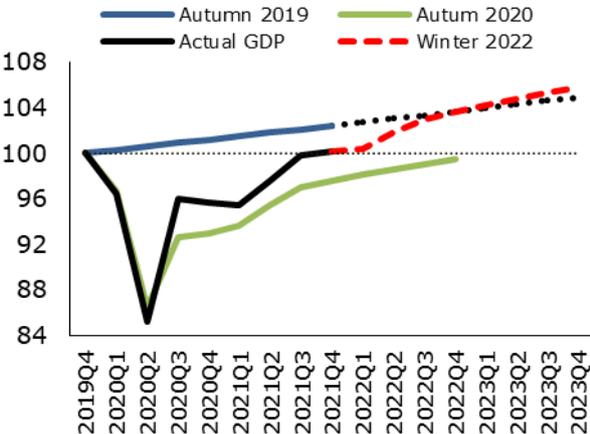
This paper investigates differences in the economic adjustment in the euro area and in the United States. This paper is structured as follows. The second section discusses the economic impacts of the COVID-19 crisis in both regions, providing, where relevant, a comparison with the global financial crisis. This section also discusses possible drivers of economic impacts, including the intensity of the lockdown measures, the structure of the economy and macroeconomic policy. The third section looks at the role of longer-term economic drivers of growth in explaining differences in growth performance. The fourth section put forward some conclusions and initial lessons for the euro area. The fifth and last section highlights some issues for further research that emerged from this paper.

2. SHORT-TERM ECONOMIC IMPACTS AND POLICY RESPONSE

2.1 REAL GDP GROWTH

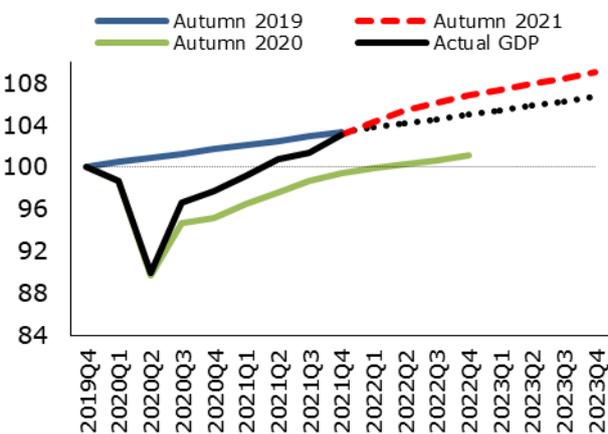
Before the COVID-19 pandemic, the euro area and the US faced broadly comparable economic conditions. Labour markets in both economies had tightened somewhat in the years immediately preceding the COVID-19 pandemic, with rising employment rates and falling unemployment. In the euro area, employment had recovered from the brunt of the global financial crisis and had reached historically high levels in 2019. At the same time, inflationary pressures remained subdued and inflation rates were below target.

Graph 3: Projections of the level of real GDP in the euro area (2019Q4=100)



Source: AMECO.

Graph 4: Projections of the level of real GDP in the US (2019Q4=100)



Note: Latest available forecast for the US is Autumn Forecast 2021.

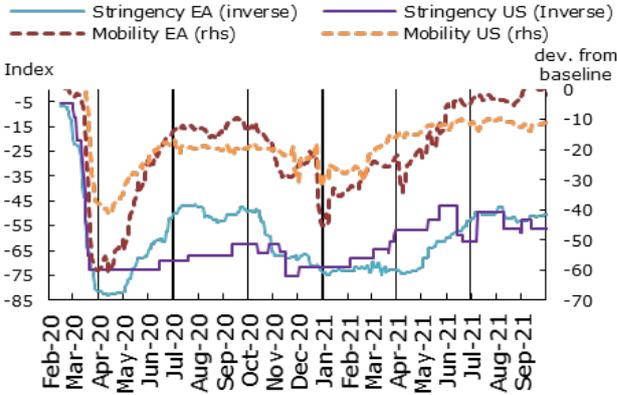
Source: AMECO.

While the US suffered a larger impact on health from the pandemic, the euro area experienced a larger economic contraction (Graph 3 & 4). In 2020, real GDP declined more in the euro area than in the United States (-6.4% and -3.4%, respectively). In both cases, the GDP contraction during the COVID-19 crisis was much larger than during the global financial crisis. In contrast to the 2008 crisis, the GDP contraction in 2020 was initially led by a sharp fall in private consumption, rather than investment. Lower private consumption accounted for about two-thirds of the total COVID-19 related

decline in GDP in the two regions in 2020. Gross fixed capital formation (GFCF) however contracted more in the euro area (around -7%) than in the US (-1.5%). In both regions, there was a significant reduction of exports and imports in 2020². However, the very different nature of the COVID-19 and the global financial crisis and the different policy responses limits direct comparison.

The euro area and the US started to recover from the COVID-19 recession more quickly than after the global financial crisis, and the pace of recovery has been faster than initially expected. The post-COVID-19 recovery started earlier in the United States, with GDP exceeding its pre-pandemic levels in 2021Q2, two quarters earlier than is expected for the euro area³. Following the global financial crisis, the sovereign debt crisis in the euro area slowed down the recovery so that the level of GDP took about seven years to reach the 2008 level. By contrast, the United States recovered rapidly from the 2008 crisis, reaching pre-crisis levels of activity within three years.

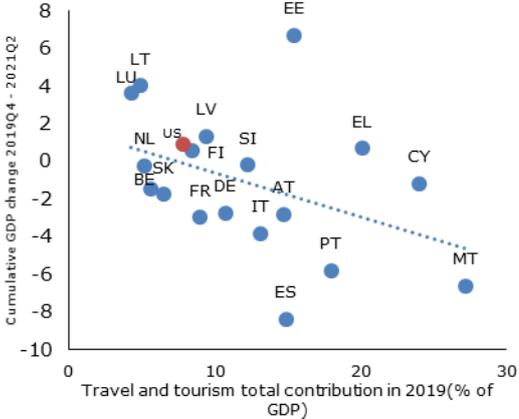
Graph 5: Stringency⁴ and mobility indicators



Note: The Google Mobility Index is expressed as the deviation from the base period (January 3 – February 6 2020).

Source: Oxford Stringency Index and Google Mobility⁵.

Graph 6: Travel and tourism and GDP level changes



Note: Ireland not included.⁶

Source: World Bank.

Less strict confinement measures and less widespread voluntary social distancing are an important factor behind the less severe output contraction in the US in 2020⁷. At the beginning of

² In both regions, the banking sector weathered the crisis well as banks entered the crisis much better capitalised and with a higher liquidity buffer than before the global financial crisis. See IMF (2020), Global Financial Stability Report, Chapter 4, October.

³ European Commission (2021), Autumn Economic Forecast.

⁴ The Oxford Stringency Index provides a measure to compare cross-country government interventions. This indicator has several limitations. It does not provide information on how well policies are enforced, nor does it capture demographic or cultural characteristics that may affect the spread of COVID-19. In addition, it does not consider the micro-differences in the measures implemented by countries. See Hale, T. et Al. (2020), “Variation in government responses to COVID-19”, BSG Working Paper Series.

⁵ The Google Mobility Index is constructed as an average of four Google Mobility Indicators (change in visitors in Grocery & Pharmacy Stores, Retail & Recreation, Workplaces, Transit Stations).

⁶ Irish GDP is distorted by the activities of multinationals. Although the COVID-19 crisis had an impact on the Irish economy, its quarterly GDP level never fell behind the pre-pandemic levels. This seems to be largely due to the increasing exports of pharmaceutical and IT generated by multinational corporations. See Honohan P. (2021), “Is Ireland really the most prosperous country in Europe?”, Central Bank of Ireland Economic Letter Vol 2021, No1.

⁷ Another important mitigating factor for the US was its ability to adapt faster than the euro area to reduced mobility, for example through greater scope for telework as discussed in section 3.2.

the crisis, the euro area implemented stricter lockdown measures to contain the expansion of the virus⁸ (**Graph 5**). These had a higher impact on mobility than measures taken in the United States and mobility fell by around 30 ppt. more in the euro area than in the United States between the end of 2020Q1 and the beginning of 2020Q2⁹. On average, mobility in the euro area was also lower than in the US in 2020 and the first half of 2021 (with the exception of 2020Q3). The intensity of the restriction has varied according to the different epidemiological developments in the two regions. At the end of 2020, the new round of restrictions in Europe and the related decrease in mobility, prompted by the wave of new infections, contributed to a double-dip recession in the euro area.

By its nature, the COVID-19 shock has had a much stronger impact on services activities that require physical interaction, in particular those related to travel and tourism. Tourism dependence was an important factor in explaining the impact of the crisis (Graph 6), with euro area countries having the largest shares of travel and tourism in their economies witnessing the steepest fall in GDP. Chatelais (2021) estimates that differences in the degree of containment measures along with the structure of the economy (such as the size of tourism and the technological development) can account for as much as 80% of the 2020 GDP growth differential between the two regions¹⁰ with the remaining 20% accounted for by differences in the level of fiscal support¹¹.

2.2 CONSUMPTION AND SAVINGS

Soon after the COVID-19 outbreak, the households' saving rate surged in both the euro area and the United States as consumption fell, while policy measures supported disposable incomes.

The households' saving rate remains elevated in the euro area, while it has returned to levels close to those recorded prior to the COVID-19 crisis in the US. In the euro area, the elevated saving rate mainly reflected sharply lower consumption (due to a precautionary attitude, the reduction of consumption possibilities and the fear of contracting the virus, which might have discouraged some consumption activities) combined with relative stability in disposable income during the pandemic¹².

In the US, the fall in GDP and consumption expenditure during 2020 was less steep than in the euro area (below 4%). But personal disposable incomes saw a substantial increase in 2020 over 2019 (6% in nominal terms), despite the pandemic, thanks to COVID-related direct transfers from federal budget. This explains the sharp increase in the US household saving rate in 2020. The American Rescue Plan of early 2021 (see below) also led to a similar spike in the savings rate, but rapid

⁸ The Effective Lockdown Index (an aggregate measure of the Oxford Stringency Index and Mobility Index) provides further evidence that the United States was subject to fewer restrictions than the euro area. The index aggregates data for Germany, France, Italy and Spain. See ECB (2021), "Economic developments in the euro area and the United States", Economic Bulletin, Issue 2/2021.

⁹ According to the IMF (2021), stricter voluntary confinements in Europe, beyond what can be attributed to government lockdown measures, help to explain most of the activity gap, which reflects GDP differences versus the US. See IMF Regional Outlook April 2021 "[Online Annex. Differences in Output Performance between Europe and the United States during COVID-19](#)". On the role of mobility, see also Diakonova and del Rio (2021), "Some determinants of the growth differential between the euro area and the United States since the onset of the pandemic". Economic Bulletin 2/2021 Quarterly Report on the Spanish Economy.

¹⁰ See Chatelais, N. (2021), "Covid-19 and divergence in GDP declines between Europe and the United States". In addition, IMF Regional Outlook April (2021) found also that differences in macroeconomic policies matter less than other factors.

¹¹ Similarly, Milesa Ferretti G.M., (2021) "The Travel Shock", using a very large sample of countries, shows how the deviation of 2020 growth from its pre-COVID forecast is very strongly correlated with the share of tourism in GDP, and to a lesser extent with other indicators of the supply composition of economic activity.

¹² EU Commission and ECB analysis showed that the increased savings were mainly involuntary driven by government-imposed restrictions and fear of infections. Precautionary behaviours played a limited role. See Croitorov O. et al. (2021), 'The macroeconomic impact of the Covid-19 pandemic in the euro area', Quarterly Report on the Euro Area, Vol. 20, No. 2 (2021).

consumer demand growth through 2021 and lack of subsequent large scale fiscal transfers has led to the US saving rate returning to more normal historical levels by the end of 2021.

Accumulated (“excess”) savings have increased across the income distribution in the two regions and higher-income households have experienced larger increases. In Europe, several studies suggest that additional savings have been mainly concentrated among older and higher-income households, thus aggravating existing inequalities¹³. Similarly, in the US, there is evidence that the savings are largely concentrated among high-income households¹⁴.

One important feature of the pattern of consumer demand during the pandemic has been the strong switch in demand from services to goods. While real expenditure on services in the US only just regained pre-pandemic (end 2019) levels at the end of 2021, expenditure on durable goods rose by 20% over the same period. This imbalance is also reflected in global goods trade volumes, which in November 2021 were 8% higher than end 2019, while services trade remains well below pre-pandemic levels. In effect, active fiscal support policies have helped maintain domestic and global demand, but combined with pandemic supply restrictions the high demand for goods has accentuated supply and logistical bottlenecks, helping to push up inflation rates. A key question for the outlook for both global activity and inflation is how rapidly this rotation in demand to goods reverses as the pandemic eases.

2.3 LABOUR MARKETS

There have also been differences in the way labour markets reacted to the COVID-19 crisis, though the recovery has so far been speedy in both regions (Graph 7). The employment rate in the United States fell sharply in the early months of the pandemic, and the unemployment rate spiked at 15% in April 2020. The unemployment rate fell back rapidly in 2020 and stood at 4.0 % as of January 2021 (compared to 3.6% pre-pandemic). Meanwhile, despite a much larger hit to GDP, the unemployment rate in the euro area remained broadly stable. In 2020, the unemployment rate in the euro area increased by only 0.3 ppt. up to 7.9% but it declined to at around 7.0% in December 2021 (0.1 ppt. lower than the pre-crisis level)¹⁵. Following the COVID-19 shock, labour force participation declined in both regions although the contraction was larger and longer lasting in the US than in the euro area (see also section three). The strong labour market recovery observed in both regions suggests that scarring and hysteresis effects that could depress participation rate over the long-term may be less than initially feared.¹⁶

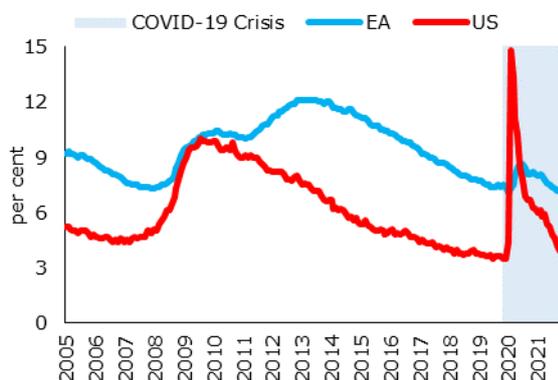
¹³ See “COVID-19 and the increase in household savings: an update”. ECB Economic Bulletin, Issue 5/2021 and Friz R. and F. Morice (2021), “Will consumers save the EU recovery? – Insights from the Commission’s consumer survey” SUERF Policy Note, Issue No 237.

¹⁴ See ECB, 2021, “[The implications of savings accumulated during the pandemic for the global economic outlook](#)”, ECB Economic Bulletin, Issue 5/2021.

¹⁵ The change in unemployment rates in the euro area and the US are not directly comparable because of classification differences. In the EU, workers in temporary lay-off are considered employed if they have an assurance to return to work within a period of 3 months or receive at least 50% of their salary from the employer. The extensive use of short-time work schemes implied that, in most cases, workers remained on the payroll and were not considered unemployed. Conversely, the US classifies all persons on layoff (who have a recall date or who expect to be recalled within 6 months) as unemployed. See also Sorrentino, C. (2000), “International unemployment rates: how comparable are they?”, BLS Monthly Labour Review.

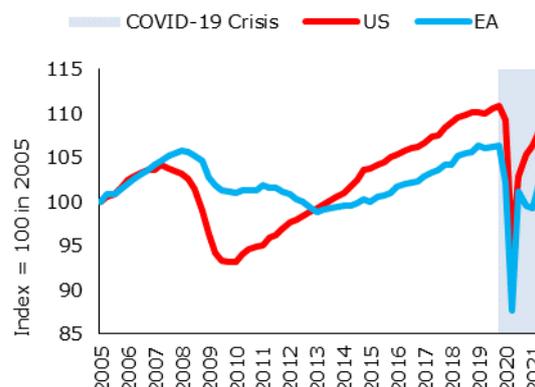
¹⁶ See also IMF (2021), “After-effects of the Covid-19 Pandemic: Prospects for Medium-term Economic Damage”, Chapter 2 April WEO.

Graph 7: Unemployment rate in the euro area and the US



Source: Eurostat and BLS.

Graph 8: Total hours worked in the euro area and the US



Source: Eurostat and BLS.

In both economies, a large part of the policy response was directed towards protecting household incomes, although through different approaches. In the euro area, short-time working schemes preserved employment relationships by subsidising workers’ wages and protecting jobs and human capital¹⁷, supported by the EU-level SURE¹⁸. The widespread use of short-time work schemes in the euro area was an important factor behind the relatively mild impact on the unemployment rate in this region¹⁹. Policies in the US instead relied to a large extent on direct income support to households through stimulus cheques, largely non-means tested, as well as expanded unemployment insurance programs under the CARES Act. However, unlike in the previous crisis, a large-scale work retention scheme via the Paycheck Protection Programme (PPP) was also introduced, albeit its effectiveness has been questioned²⁰.

Unlike employment, total hours worked fell in both regions (Graph 8). In the US, during the first half of 2020, total hours worked declined by around 12% (in line with the decline in employment levels). In the euro area, the fall was larger in the first half of 2020, amounting to around 17%, against only a 1.7% drop in employment (age group 15-64). Since then, hours worked rebounded in both regions, reflecting the different speed of the recovery. While in the US they almost recovered (0.4 lower in 2021Q4 relatively to 2019Q4), they remain below pre-crisis levels in the euro area (1.9% lower in 2021Q3 relatively to 2019 Q4).

¹⁷ Short-time work schemes have been recognised to be effective during a temporary negative shock since they enable firms to keep specific human capital and avoid the costly processes of separation, re-hiring and training when conditions improve. The costs of large scale dismissals, in particular, are typically high for companies in the euro area, while they tend to be lower in the US. This could motivate the differentiation of policies in both economies during the crisis. See Lydon, R, T. Y. Mathä and S Millard, (2019) “[The whys and wherefores of short-time work: Evidence from 20 countries](#)”, VOX, CEPR Policy Portal (voxeu.org).

¹⁸ See McDonnell, C. et al. (2021), ‘The SURE instrument – key features and first assessment’, Quarterly Report on the Euro Area, Vol. 20, No. 2, pp. 41-49.

¹⁹ In addition, less strict employment protection legislation in the US compared to several European countries might also contribute in explaining different unemployment dynamics. For an overview on employment protection legislation, see OECD (2020), “[2020 Edition of the OECD Employment Outlook](#)”, Chapter 3.

²⁰ The Paycheck Protection Program (PPP) was introduced early during the pandemic with the goal of helping Small and Medium Enterprises retain workers. The programme, which was extended several times, provided a total of USD 943bn (around 4% of GDP) in form of forgivable loans. Due to various design flaws, its effectiveness may have been limited, e.g. Granja, J, C. Makridis, C. Yannelis, and E. Zwick, 2021, “[Did the Paycheck Protection Program Hit the Target?](#)” Working Paper No 2020 52 University of Chicago and Autor et al, 2020, “[An Evaluation of the Pay check Protection Program Using Administrative Payroll Microdata \(mit.edu\)](#)”, Economic Outlook Talk American Statistical Association.

In both regions, the large shifts in output led to swings in measured labour productivity. In the euro area, the large output adjustment in 2020 but more stable employment headcount meant a temporary reduction in headline labour productivity. In the US, the larger adjustment in employment in 2020, particularly the fall in low wage employment, meant that measured labour productivity increased but this effect waned as employment recovered.

The economic impact of the COVID-19 pandemic has been uneven across population groups in both the euro area and the US (Graph 9 & 10). In both regions, employment fell most among low-skilled workers, as they are more likely to work in jobs that require physical proximity, and are less likely to be able to telework. The gender impacts are less clear. In the euro area, employment losses have been larger for men although women experienced a steeper fall in working hours than men did during the confinement periods. In the US, it has been women who have experienced a larger decline²¹. Young workers suffered particularly badly from the broad halt in recruitment in the euro area and the more limited and precarious job opportunities available. However, the situation has improved since 2020. In 2021Q3, youth employment stood at around 12.4 million and completely recovered, exceeding by 2% the pre-crisis levels. By contrast, in the US, the impact on employment was broadly similar across age groups²² (Graph 10).

Effective and timely policy support helped avoid a surge in bankruptcies in the hard-hit industries in both the euro area²³ and the US²⁴. The number of bankruptcy filings in the both the euro area and the US fell in 2020 as compared with the situation before the COVID-19 outbreak, although some sectors remain vulnerable, notably accommodation and food²⁵. Initially, fears were articulated that extended financial support to companies could increase the share of so-called “zombie firms” in the economy, that is non-profitable firms which survive thanks to poorly targeted support schemes. The most recent findings suggest that this risk may be less likely to materialise²⁶. Public finance support to firms has also helped to avoid a rapid increase of Non-Performing Loans (NPL), which was at the heart of the global financial crisis. Moreover, banks were much better capitalised during the COVID-crisis as compared to early 2000s and overall played a stabilising role in the economy. However, as emergency policy support measures are phased out, there remains a risk of rising business failures, with a possible impact on NPLs.²⁷

²¹ There is also initial evidence that women have carried a much heavier burden of the additional childcare responsibilities created by school closures. See, Sun, C. and Russel, L. (2021), “The impact of COVID-19 childcare closures and women’s labour supply”, VoxEU.

²² See [ECB Economic Bulletin, Issue 8/2020](#).

²³ See “Corporate Vulnerability and Structural Developments post COVID-19: Challenges and Policy Responses”, 2021, Note for the EPC (6 October 2021).

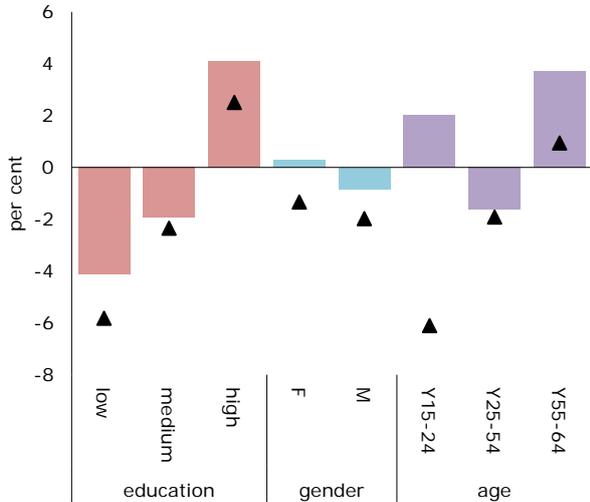
²⁴ United States Courts, (2021), “[Bankruptcy Filings Continue to Fall Sharply](#)”, November.

²⁵ ECB, 2021, Financial Stability Review, November.

²⁶ See for example Bighelli et al. (2021) “Covid-19 government support may have not been as unproductively distributed as feared”, VoxEU. Using data on firms located in Croatia, Finland, Slovenia and Slovakia, the authors found that only a small share of support went to zombies or declining firms. Similarly, Harasztosi et al. (2021), “Firm-level policy support during the Covid-19 crisis: So far so good”, VoxEU, using data from the Investment Bank Investment Survey (EIBIS) could not find evidence that support was tilted towards firms already weak before the crisis. On the other hand, although the recent historically record low unemployment rate in the euro area might suggest that support might have been too widespread and kept in business also non-profitable firms.

²⁷ See ECB, 2020, [Financial Stability Review](#), November 2020 and IMF (2020), [Global Financial Stability Report](#), October 2020.

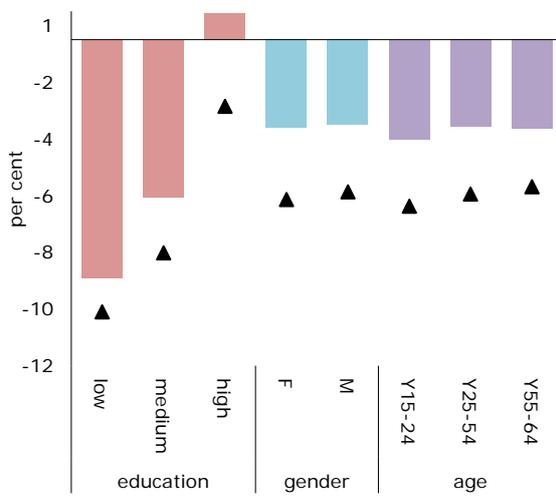
Graph 9: Changes in employment in the euro area by category of worker in 2020Q4 and 2021Q3 compared to 2019Q4



Note: Black diamonds identify the percentage change in 2020Q4 compared to 2019Q4. Bars identify the percentage change in 2021Q3 compared to 2019Q4

Source: OECD and Eurostat.

Graph 10: Changes in employment in the US by category of worker 2020Q4 and 2021Q3 compared to 2019Q4



Note: Black diamonds identify the percentage change in 2020Q4 compared to 2019Q4. Bars identify the percentage change in 2021Q3 compared to 2019Q4

Source: OECD and BLS.

2.4 FISCAL POLICY RESPONSE

The euro area and the US both provided sizable and timely fiscal support to their economies. US fiscal support²⁸ is estimated at 14.9% of GDP in 2020-2021 and 17.4% of GDP over 2020-22²⁹. This compares with euro area fiscal support of 13.8% of GDP in 2020-21 and 17.0% of GDP in 2020-22 and reaching 17.9 % of GDP if the RRF is considered (Graph 11).

The fiscal policy response differed however in important respects between the euro area and the United States. Aside from a greater reliance on automatic stabilisers, in the euro area, Member States deployed a wide range of fiscal instruments including subsidies and transfers to firms and households on short-time working schemes. In addition, national efforts have been accompanied by important actions taken at the EU level (see below). While the design of the packages differed across the Atlantic, their timeliness and size successfully supported household incomes in both regions and prevented (especially in the US) a slump in private consumption, which provided a basis for a swifter recovery.

In the US, support was provided via a whole series of fiscal packages adopted sequentially under the Trump and Biden administrations³⁰. The most substantial were the CARES Act of March 2020 (USD 2.3tr, around 11% of US GDP) and the American Rescue Plan (ARP) Act, a further USD 1.85tr

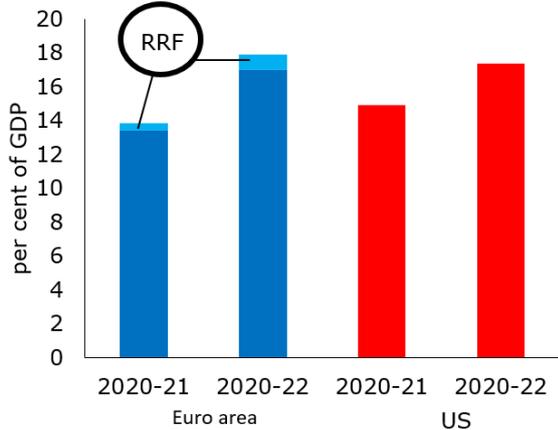
²⁸ Fiscal support is defined as the cumulative change in primary balance from a conventional starting point, 2019 in this paper. This metric approximates the effective fiscal policy impulse in response to the crisis, including temporary measures that were introduced and expired (or are expected to expire) over this period, as well as the support provided by automatic stabilisers.

²⁹ On difficulties in comparing the fiscal response between the euro area and the US, see EU Commission, 2021, “The 2021 Stability & Convergence Programmes: an Overview, with an Assessment of the Euro Area Fiscal Stance”, 16 July.

³⁰ For more information on the various policy packages in the US see IMF Policy Responses to COVID-19.

(around 9% of US GDP) package signed into law in March 2021. Similarly, to the earlier interventions, most of the ARP aid was for direct grants or tax credits to households, businesses, state and local authorities and federal agencies. Key elements included extending the top-up of unemployment benefits introduced by the CARES Act with a USD 300 weekly supplement until September 2021 and a USD 1,400 one-off payment to individuals, subject to income thresholds. More recently, a new USD 1.2tr bipartisan infrastructure bill focusing on broadband, energy and climate change mitigation was approved by Congress in November 2021. This amounts to 5% of GDP, spread over ten years. A further package, of USD 1.75tr, focusing on climate action, healthcare and education is currently under discussion, but prospects for the passing of further measures remain unclear.

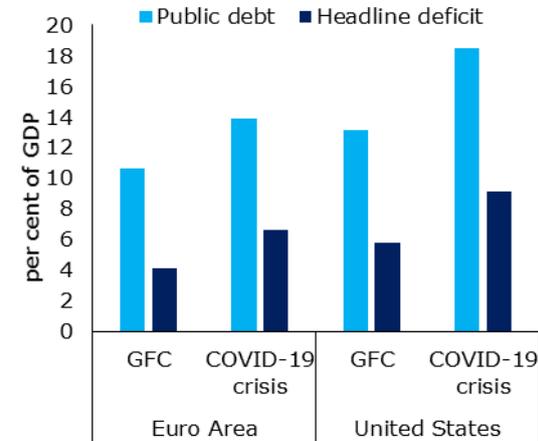
Graph 11: Fiscal support in the euro area and the United States, 2020-2022



Note: Fiscal support is defined as the cumulative change in primary balance from a 2019 starting point.

Source: AMECO.

Graph 12: Change in debt-to-GDP ratio and change in headline deficit in 2009 (global financial crisis) and 2020 (COVID-19 crisis)



Source: AMECO.

In response to the pandemic, the euro area, the EU and the Member States also took bold policy measures. At the EU level, the policy response included, first, measures granting flexibility to Member States to support their economies (activation of the general escape clause of the Stability and Growth Pact, a temporary framework to use the flexibility under EU state aid rules, and redirection of cohesion policy funds) and, second, a series of safety nets. Throughout 2020, support measures were established for workers (the temporary Support to mitigate Unemployment Risks in an Emergency - SURE); for businesses (Pan-European Guarantee Fund by the European Investment Bank); and for Member States (European Stability Mechanism (ESM)’s Pandemic Crisis Support).

The European Commission and the EU also proposed Next Generation EU (NGEU), a major recovery and resilience plan, which has at its core a new Recovery and Resilience Facility (RRF)³¹. The RRF, as the main component of the NGEU, makes available, through grants³² and loans,

³¹ Through the Facility, EUR 338 bn in grants and up to EUR 385.8 bn in loans (in 2020 prices) will be available until 2026 to support reforms and investments in all Member States. This is an opportunity for all Member States to address key structural challenges and investment needs, while embracing the green and digital transitions.

³² An allocation key will fix a maximum possible amount for the grant component. For 70% of the total available grants, the allocation key will take into account the Member State’s population, the inverse of its GDP per capita, and its average unemployment rate between 2015 and 2019, always compared to the EU average. For the remaining 30%, the formula will replace the 2015-2019 unemployment rate indicator by observed loss in real GDP over 2020 and the observed cumulative loss in real GDP over the period 2020-2021. See “REGULATION (EU)

up to EUR 723.8 billion (in 2020 prices) in financial support for reforms and investment based on Recovery and Resilience Plans (RRPs) proposed by Member States³³. The new Facility is oriented towards the supply-side of the economy and aims to improve long-term growth with a combination of investment and policy reform.

Many governments pledged and delivered substantial public investment to support the recovery. In the euro area, a drop in private investment (as a share of GDP) following the COVID-19 shock was partly compensated by a symmetric rise in public investment (as a share of GDP). This was in stark contrast to the period following the global financial crisis, which saw euro area governments cutting back on public investment with the aim of consolidating the public finances. Taken together the combination of national and EU funding implies an increase in public investment spending. The EU Commission's Autumn 2021 forecast projects public investment in the euro area to rise to 3.5% of GDP in 2022 and 2023, its highest level since 2010.

The fiscal position in both the euro area and the US deteriorated significantly during the COVID-19 crisis and debt-to-GDP ratios reached historically high levels. According to the Commission 2021 Autumn Forecast, the euro area aggregate debt-to-GDP ratio increased by around 14 ppt in 2020 to 99.3% of GDP (Graph 12). As for the US, general government gross debt (as a share of GDP) is expected to have increased by around 19 ppt to 127% of GDP in 2020³⁴. There is wide consensus that these large increases were justified as an appropriate response to the crisis, and neither the euro area member states nor the US experienced any issue in accessing liquidity (see also next section on the monetary policy response). Moreover, the rapid collective action in the EU swiftly dispelled initial concerns about possible capital market fragmentation while also increasing the available fiscal space via lowering sovereign bond yields. In addition, the low interest rate environment meant that debt servicing costs remained lower than a few years ago despite the higher debt-to-GDP ratios³⁵.

2.5 MONETARY POLICY RESPONSE

A rapid monetary and prudential policy response has also played an important role in shielding both regions. At the beginning of the COVID-19 crisis, financing conditions tightened somewhat in both regions given the overall uncertainty of the scale and duration of the crisis. However, the increase was short-lived, following a strong monetary policy response preventing that financing conditions for the economy would tighten in a pro-cyclical way³⁶.

European Central Bank (ECB) intervention aimed at keeping monetary transmission channels intact, safeguarding medium-term price stability and preventing financial market fragmentation. The response mainly consisted of additional asset purchases, the easing of collateral

2021/241 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 February 2021 establishing the Recovery and Resilience Facility".

³³ As of Mid-February 2022, 26 EU Member States had submitted their plans to the Commission, out of which all but one euro area country. The Council had adopted the recovery and resilience plans of 22 Member States, including of eighteen euro area countries, after positive assessments by the Commission. The Commission has already paid close to EUR 56.6 billion in pre-financing to euro area Member States since August 2021. In addition, a first disbursement of EUR 10 billion to Spain took place before the end of 2021, following the first payment request.

³⁴ European Commission Autumn Forecast 2021.

³⁵ Interest expenditure as a share of GDP in both the euro area and the US declined in 2020.

³⁶ Guarantees in the euro area and direct credit allocation by the Federal Reserve (with backstopping from the Treasury) in the US have been also an important element of crisis response to prevent fragmentation of financial markets and credit shortage.

standards and new favourable liquidity provision operations. The key initiative has been the establishment of the pandemic emergency purchase programme (PEPP), which helped maintain favourable financing conditions for sovereigns and economy wide. The ECB has maintained the deposit facility rate at a record low of -0.5% (since September 2019).³⁷

As a response to the pandemic, the Federal Open Market Committee (FOMC) reduced its policy interest rate from 1.50-1.75% to 0-0.25% in 2020. The FOMC also restarted Quantitative Easing (QE) on the Treasury and mortgage-backed bond markets, relaunched facilities used in the global financial crisis (e.g. the Primary Dealer Credit Facility and the Money Market Mutual Fund Liquidity Facility) to maintain liquidity, and encouraged banks to use regulatory capital and liquidity buffers to increase lending and lending directly to state and local governments.³⁸ The FOMC also provided clear forward guidance that policy rates would be kept low until the economy was on track to meet employment and price stability goals. In summer 2020, the FOMC amended its operating framework to average inflation targeting, effectively allowing the inflation rate to deviate temporarily above the long run target. The ECB subsequently introduced also more flexibility in its operating framework³⁹.

The recent pick-up in inflation may prod monetary authorities in both regions to tighten faster than expected, especially in the US. Inflation has spiked in both the US and in the euro area. In the US, CPI inflation was 7.5% y/y in January 2022, the highest level in more than thirty years. In the euro area, inflation in January 2021 rose to 5.1% y/y, which is the highest on record. Indeed, the drivers of higher inflation have been predominantly connected to the dislocations caused by the pandemic, most notably the effects on supply and demand from the shutdown, the uneven reopening and the increase in gas prices. The ECB announced in December 2021 that that the progress on economic recovery and towards its medium-term inflation target permitted a gradual reduction in the pace of asset purchases over 2022. The US FOMC already started reducing the pace of its asset purchases in November 2021 and markets expected the first policy rate rise in March 2022. The outbreak of the war in Ukraine as the paper was to be published added a significant upside risk for inflation outlook.

3. DIFFERENCES IN LONG-TERM DRIVERS OF GROWTH

The overall faster recovery of the US economy from the COVID-19 crisis fits broader historical patterns. Aside from faster recovery from the global financial crisis, the US has shown faster growth in incomes per head over the 2 decades prior to the COVID-19 crisis (1999-2019), mainly driven by differences in total factor productivity. This translated into higher growth in GDP per capita (Graph 13), which increased by a cumulative 29% in the US (versus about 22% in the euro area). This is much less than the difference in absolute GDP growth rates - US GDP increased on average by 2.2% per

³⁷ Lane, P. (2020), 'The Monetary Policy Package: An Analytical Framework', ECB Blog 13 March 2020 and Schnabel I. (2021), "Lessons from an unusual crisis" Speech at the Federal Reserve Bank of New York conference on "Implications of Federal Reserve Actions in Response to the COVID-19 Pandemic".

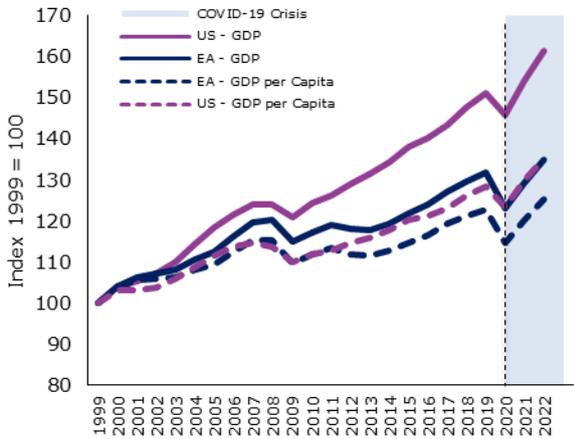
³⁸ Milstein, E. and D. Wessel (2021), "What did the Fed do in response to the COVID-19 crisis?" Brookings.

³⁹ The monetary policy response in both the euro area and the US needs to be seen in the context of the recent reviews of their monetary policy frameworks. Following the adoption of a new monetary policy strategy in July 2021, which has in particular introduced a 2% symmetric inflation target over the medium term, the ECB has revised its forward guidance on policy rates. In summer 2020, the Federal Reserve modified its strategy to focus on hitting an inflation rate of 2% on average over time, while committing to temporarily tolerating inflation rates above 2% in the current conjuncture.

year over the same period, against only 1.4% in the euro area, but this reflects stronger population growth in the US.

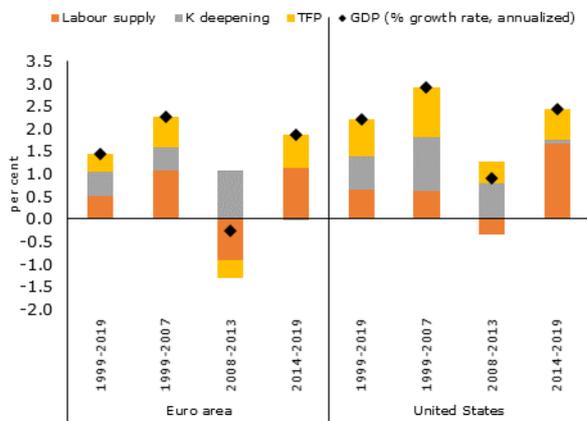
Over the past thirty years, total factor productivity, grew at a faster pace in the US than in the euro area explaining a good portion of the GDP differential (Graph 14). Population growth in the US compensated for a relatively weak contribution from labour force participation over the 1999-2007 period. While population growth has since diminished, it remains a more important growth driver of aggregate growth than in the euro area. The contribution of capital deepening has varied over time, with some periods seeing little capital deepening⁴⁰ in either region. The design of post-crisis policies in the euro area needs to take into account the deep-rooted structural factors that stand behind these differences⁴¹.

Graph 13: Level of GDP and GDP per capita in the euro area and the US



Source: AMECO.

Graph 14: GDP growth decomposition in the euro area and the US (1999-2019)



Source: AMECO.

3.1 TOTAL FACTOR PRODUCTIVITY

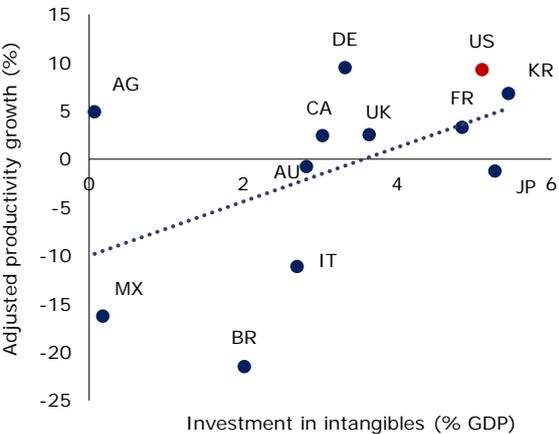
The secular decline in TFP growth has been the single most important factor behind the slowdown of output growth in both the euro area and the US (Graph 14). The ICT boom gradually widened the gap between TFP growth rates in the US and the euro area, with a deceleration in trend TFP growth rates from the mid-1990s in the euro area and especially in Member States where the share of ICT production in output was relatively small, notably in some southern European countries⁴². Similarly, intangible investment has been stronger in the US, and is strongly correlated

⁴⁰ Defined as an increase in the capital to labour ratio.
⁴¹ A recent study highlighted that the critical issue behind the different growth performance of the US and the euro area over the last twenty years is related to the Sovereign Debt Crisis and the inability of Euro area policies and institutions to counter in a timely and effective manner economic recessions. See Bertoldi, M and K Orsini, 2020, "US and euro area growth performances: Are they so different?" Journal of Policy Modelling Volume 42, Issue 4, July–August 2020, Pages 860-877.
⁴² Research and development (R&D) and innovation (R&I) are important drivers of growth but research intensity in the euro area is still lagging behind other advanced economies. For example, in 2018, R&D spending in the euro area was around 2.2% of GDP. This is well below R&D spending in the US (2.8 % of GDP) and Japan (3.3% of GDP). See Eurostat, Intramural R&D expenditure (GERD) by sectors of performance.

with productivity growth⁴³ (Graph 15). With digitalisation accelerating because of the pandemic, narrowing the gap with the US will demand forceful investment to tackle pre-pandemic weaknesses in digital skills, innovation and tangible capital. Weaker investment in non-ICT areas also affected TFP growth, while allocative efficiency in some countries may have been impeded by reallocation of production inputs to less productive sectors (e.g. construction in some European countries).

The slow recovery from the global financial crisis contributed to the deceleration in TFP in the euro area. The long period of slow growth and high unemployment (especially the long and very long-term unemployed) amplified skill mismatches and hampered reallocation of labour to more productive sectors⁴⁴. This was different in the US, where the labour market recovery was much swifter and characterised by a decisive reduction in both short and long-term unemployment. In addition, deleveraging in the corporate sector and tight credit conditions following the post global financial crisis may have undermined TFP growth globally, partly by constraining investments in intangible assets in distressed firms⁴⁵.

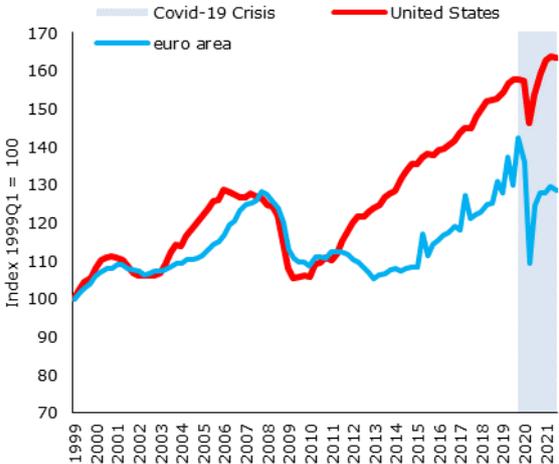
Graph 15: Intangible investments and productivity growth in selected G20 countries (2002-2017)



Note: Adjusted productivity represents the growth in productivity that is not due to the convergence process of emerging countries.

Source: AMECO and OECD

Graph 16: Gross Fixed Capital Formation in the euro area and the US (Index 1999Q1=100)



Note: Gross fixed capital formation, volume estimates, fixed PPPs.

Source: OECD.

The COVID-19 pandemic poses both upside and downside risks for TFP growth in both regions. On the upside, the pandemic may have spurred a period of acceleration, by inducing changes in working practices, in business models and firms’ organisation⁴⁶. Investment in intellectual property (e.g. investment in software and research and development), highly correlated with TFP growth, has held up better than investment in machinery and equipment, in particular in the US. Furthermore, in

⁴³ See Roth, F. and A. Thum, 2013, “Intangible Capital and Labor Productivity Growth: Panel Evidence for the EU from 1998–2005”, Review of Income and Wealth 59 (3).

⁴⁴ See “The euro area's growth prospects over the coming decade” (2013), Quarterly Report on the Euro Area, Volume 12 N° 4, which highlights “adjustment rigidities” in the EU, with skill mismatches as one type of rigidity (others mentioned are sectoral reallocation frictions, slow adjustment of reservation wages etc.).

⁴⁵ See IMF, 2017, “Gone with the Headwinds: Global Productivity”, IMF Staff Discussion SDN 17/04 and EC Commission, 2013, “The euro area's growth prospects over the coming decade”, Quarterly Report on the Euro Area, Vol 12 N° 4.

⁴⁶ McKinsey (2020), “How COVID-19 has pushed companies over the technology tipping point—and transformed business forever”. 5 October.

the euro area, most Recovery and Resilience Plans (RRP) promote digitalisation across public and private sectors (especially SMEs), and will provide further impetus to that trend. Over the medium term, the secular ongoing shift from manufacturing to services in recent decades may have slowed underlying potential TFP growth. However, the US has had stronger TFP growth in services than the EU providing some scope for EU catch-up (for example, in the wholesale and retail trades).

On the downside, there are several channels through the COVID-19 crisis might have damaged future prospects for TFP growth in both regions. Lockdown-induced interruptions to education and training might have damaged human capital accumulation and the accumulation of corporate debt following the COVID-19 crisis might dampen investment and innovation going forward, especially in case of a reintensification of the pandemic. As supporting policies are withdrawn, the number of firm exits could increase leading to the destruction of jobs, which could potentially lead to a deterioration of skills if the reallocation of displaced workers to other firms is slow. The relatively strong TFP performance in 2020, particularly in the US, represents only a temporary phenomenon, and may be a one-off level shift, rather than the start of a more sustained increase⁴⁷. Moreover, over the medium-term, population ageing in advanced economies will also slow potential growth, while as an ageing labour force may add to existing skills mismatches.

3.2 CAPITAL ACCUMULATION

Capital accumulation in the euro area increased at a slower pace than in the US for much of the last quarter of the century and this divergence further widened in the decade following the global financial crisis (Graph 16). In the euro area, the level of gross fixed capital formation (GFCF) (in real terms) remained subdued in the aftermath of the global financial crisis, and it took about ten years to return to its pre-2008 level⁴⁸. In the US, GFCF led the recovery from the slump in 2008 and continued to rise at a faster rate than in the euro area until COVID-19⁴⁹. A part of the explanation may be provided by increased credit frictions that further reduce investment in intangibles such as R&D, organisation capital, and training in Europe. In Europe, post-GFC deleveraging may have constrained the corporate sector more than elsewhere. Moreover, the ‘churn rate’ – the rate at which businesses default and are replaced by new ones – tended to be lower in the euro area than in the US, which may have affected the pace of innovation and creative destruction and the level of competition.

Capital stock accumulation has also received little government support since the global financial crisis. Both in the US and in the euro area, the government investment-to-GDP ratio fell in the early 1990s and even more steeply in the aftermath of the global financial crisis⁵⁰. Compared to 1991, in 2019, the government investment-to-GDP ratio was 1.2 ppt lower in the euro area - 12 (from 4% of GDP in 1991 to 2.8% of GDP in 2019) and 1.3ppt. lower in the US than in 1991 (from 4.8% of GDP in 1991 to 3.5% of GDP in 2019).

⁴⁷ McKinsey (2021), [Will productivity and growth return after the COVID-19 crisis?](#), 30 March.

⁴⁸ Analysis from the European Central Bank shows that after the global financial crisis the loss of capital stock was the main drag on potential output growth. See ECB (2020), ‘The scarring effects of past crises on the global economy’, ECB Economic Bulletin Issue 8/2020.

⁴⁹ See ECB Economic Bulletin, Issue 3 / 2017 and Quarterly Report on the Euro Area, Volume 12 N. 4 (2013).

⁵⁰ The persistent differences in government investment-to-GDP ratios between the US and EA should not be over-interpreted, as they are at least partly explained by higher defence investment spending in the US. On the other hand, a significant part of the US defence expenditure (about 0.4% of GDP in 2019) is spent on intellectual property and research, with spill overs to the private sector.

The Euro area's investment was relatively more affected by the COVID-19 shock⁵¹. Gross fixed capital formation (GFCF) has rebounded in both regions but it remained below pre-pandemic levels in the euro area by 2021Q3⁵² (Graph 16). By contrast, in the US, GFCF decreased by less than in the euro area and has recovered at a much faster pace, so that it returned to its pre-crisis level in 2021Q2. The impact of COVID-19 on GFCF (along with other components of GDP) reflects in part the intensity of lockdown measures to contain the spread of the virus, with more stringent lockdowns associated with lower investment⁵³. Going forwards, there is the risk that the large corporate debt burden accumulated during the pandemic might act as a drag on investment⁵⁴.

The swifter recovery in the US might also be related to greater confidence in economic recovery in the US due to its greater flexibility. The ability to adapt faster than the euro area to reduced mobility, for example through greater scope for telework⁵⁵, may have allowed the US corporate sector to adapt its businesses and business model quicker to the post-COVID world. The strong financial situation in the US corporate sector pre-COVID-19 may also have helped to buttress investment. Finally, while higher uncertainty took a toll on business investment in both regions early in the crisis as financing conditions tightened sharply, the increase was short-lived as various policy measures announced and implemented quickly helped financial conditions to return to their pre-crisis level⁵⁶.

3.3 LABOUR SUPPLY

Labour force participation (activity rate) in the euro area increased over the twenty years before the COVID-19 crisis as more inclusive tax and active labour market policies and better child care provision allowed for greater integration of women into the labour market (Graph 17 & 18). This is in contrast to the US, which saw a gradual fall in activity rates from the mid-1990s until 2014⁵⁷. Euro area activity rates caught up to US levels around 2011 and were only marginally below US levels (0.5pp) on the eve of the pandemic. From around 2014 to 2019, both the US and euro area experienced a parallel increase in labour market participation and employment that supported a higher labour contribution to output growth. Yet although the employment rate reached historically high levels in the euro area immediately before COVID-19 struck, it remained lower than in the US (as reflected in persistently higher reported unemployment).

⁵¹ See also Licchetta, M. and E Meyerms (2022), "[Gross fixed capital formation in the euro area during the COVID-19 pandemic](#)", QREA Vol 20 N.4.

⁵² However, the level of GFCF in the euro area is broadly unchanged from 2019Q4 if the comparison excludes the volatile Irish data.

⁵³ IMF (2020) found that lockdowns that are more stringent are associated with lower consumption, investment, and higher unemployment rates. IMF World Economic Outlook, 2020, "A Long and Difficult Ascent", October. See also Niermann, L. and I. Pitterle, 2021, "The COVID-19 crisis: what explains cross country differences in the pandemic's short-term economic impact?" MPRA Paper No. 107414.

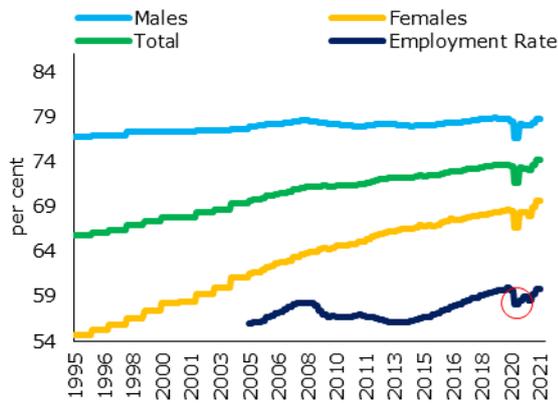
⁵⁴ On the accumulation of debt during the COVID-19 crisis in the Non-Financial Corporations and related risks for investment decisions, see ECB (2021), Financial Stability Review, May.

⁵⁵ A recent study estimated the degree of telework ability across 35 economies and found that in most euro area countries (with the exception of Finland and the Netherlands) it is generally lower than in the US. See Brussevich, Dabla-Norris, and Khalid 2020, "[Who will Bear the Brunt of Lockdown Policies? Evidence from Tele-workability Measures Across Countries](#)", IMF WP 20/88. See also Dingel, Jonathan I., and Brent Neiman. 2020. "How many jobs can be done at home?" Journal of Public Economics, 189.

⁵⁶ Pellegrino, G., Ravenna, F. and G. Züllig (2020), 'Pessimistic expectation increase the negative effects of Covid-19 uncertainty in the euro area', CEPR Discussion Paper, No. 15321.

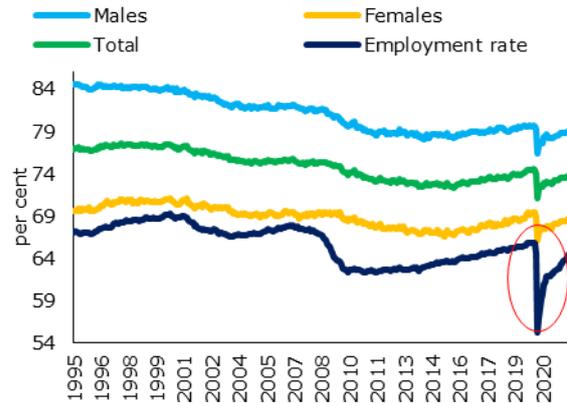
⁵⁷ The literature has robustly established that population ageing and other trends in demographic changes in the US account for at least half of the decline in labour force participation, and possibly up to two third. See also Preze-Arce, F. and Prados, M. (2020), "The Decline in the U.S. Labor Force Participation Rate: A Literature Review".

Graph 17: Activity rates (15-64) and employment rate (15-74) in the euro area



Source: OECD.

Graph 18: Activity rates (15-64) and employment rate (15-74) in the US



Source: OECD.

Labour force participation declined in the wake of the COVID-19 crisis in both regions and it remains below pre-crisis levels (especially in the US) (Graph 17 & 18). While the euro area has been able to re-absorb its inactive population and to exceed the pre-crisis level (in 2021 Q3 the euro area activity rate for the age group 15-64 was 0.5 ppt higher than pre-COVID-19), the recovery in the activity rate has stalled in the United States. By December 2021, the US activity rate was 0.6 ppt. below the pre-crisis levels, despite the faster recovery in the US. It is unclear how much of this shift is permanent. Early retirement may explain more than a half of this gap, but participation for prime-aged individuals also remains well below pre-pandemic levels, in part reflecting factors related to the pandemic such as caregiving needs and ongoing concerns about the virus. At the same time, low levels of US labour participation coincide with record-high levels of voluntary quits from jobs, a phenomenon that has been dubbed the ‘great resignation’⁵⁸. According to the BLS figures, the number of quits in the final quarter of 2021 stood at over 4ml, the highest ever registered.

4. MAIN LESSONS FOR THE EURO AREA

The COVID-19 crisis is a large exogenous shock emerging from a health emergency. The policy response to the pandemic at European and national level mitigated the negative socioeconomic impact of the crisis, supporting businesses, protecting incomes and preserving employment. Some tentative lessons for the euro area emerges from this assessment:

- **Timely and well-coordinated collective action at both national and EU level helped the euro area to recover faster than after the 2008 global financial crisis.** Supportive fiscal policy played an important role in stabilising the economy, working in tandem with monetary policy and prudential policies. This helped avoiding fragmentation of financial markets and provided an important boost in confidence. This points to the need to ensure that adequate policy space and appropriate fiscal tools are available to meet future economic crises.
- **The importance of combining short-term emergency and macroeconomic and social stabilisation tools (e.g. SURE).** In the euro area short-time work schemes have been an efficient

⁵⁸ The Great Resignation started in early 2021 and characterised by a large number of employees voluntary resignations from their job positions. See FT (2022), “[The great resignation is not going away](#)”, 1 February.

tool to avoid the steep rise in unemployment, which characterised previous crises. The EU-level SURE instrument has contributed to supporting and promoting the adoption of such schemes. The policy response at the Member States level also focused on easing firms' liquidity pressures to prevent bankruptcy of viable firms, and bankruptcy rates have seen little increase thus far.

- **The need to improve the capacity to provide an effective short-term response on both the health and economic front.** The performance of the health sector as well as cooperation between the public sector and vaccine producers were crucial for limiting the impact of the crisis, in extraordinary circumstances. Pandemic preparedness needs to be enhanced to tackle similar shocks in the future, including developing, where necessary, the institutional channels to provide appropriately targeted financial support and ensure gaps in welfare coverage are filled.
- **The importance of going beyond short-term response with longer-term supply side policies to raise investment and enhance resilience.** Several euro area countries have cut back on physical infrastructure investment over decades and will need to fill the gap, particularly for climate-related investments. The relative underperformance on Total Factor Productivity growth, investment levels and business dynamism relative to the US point to the need to go beyond the differences in the short-term crisis response. The RRF is a step in the right direction as it aims at increasing the euro area's resilience to future shocks through investment and reforms.
- **Facilitating adjustment in the labour market is also key.** A key question remains how best to support job transition, particularly in the context of a sustained drive towards the green and digital economy. Experience gained from the pandemic may prove valuable for shaping the right mix of effective active labour markets policies needed to tackle skills shortages, upskilling and foster swift labour market re-integration for groups most at risk of scarring because of abrupt economic change.
- **The importance of effectively functioning markets, including adequate access to finance.** In contrast with the global financial crisis, the healthier European banking sector and financial market were a stabilising force in the current crisis. Moreover, well-functioning financial markets and adequate access to finance are vital to facilitate the reshaping of investment patterns needed to implement Europe's New Green Deal and Digital Agenda and green the capital stock.
- **A better-integrated single market and the access to finance are two areas where US holds an advantage.** The US benefits from scale effects and easier funding due to its large and more unified product, labour and financial markets. This underlines the importance of continuing progress in deepening the single market, completing the Banking Union and the Capital Market Union. Moreover, effective insolvency frameworks play a crucial role in supporting viable firms undergoing temporary problems and in providing for the orderly exit of non-viable firms.

5. ISSUES FOR FURTHER RESEARCH

Some of the issues covered in this paper suggest some **questions for further research.**

- **The impact of the COVID-19 crisis on economic convergence in the EU Member States.** The jury is still out on the magnitude of long-term impacts of the COVID-19 crisis on the economy. Although much of the long-run damage initially feared from the COVID-19 crisis in the euro area may have been avoided, uncertainties are such that attention needs to be paid to risks of scarring on the labour market and for corporates. The longer run impacts of the pandemic on productivity

remain hard to gauge at this stage, with multiple channels of influence, and will require further investigation.

- **The effectiveness of targeting of support policies in response to the COVID-19 crisis in the US and the euro area.** The extent to which temporary support policies could have been better targeted to reach those most affected, while limiting the fiscal costs and minimising the accumulation of large stocks of “excess” savings. In both regions, accumulated savings have increased across the income distributions and higher-income households seem to have experienced large increases.
- **The resilience of global supply chains as well as the costs and benefits of surplus or local capacity.** Global supply chains have suffered disruption from the pandemic, but have also had to handle dramatic demand shifts as goods demand surged. This abrupt shock may change the underlying risk calculus of global firms, affecting future investment, trade and productivity growth. Moreover, the pandemic also highlights the question of whether public policy is needed to reinforce the resilience of (critical) supply chains and at what cost this might be achieved.

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