

RESEARCH REPORT

Negative Interest Rate Policies: Taking Stock of the Experience So Far

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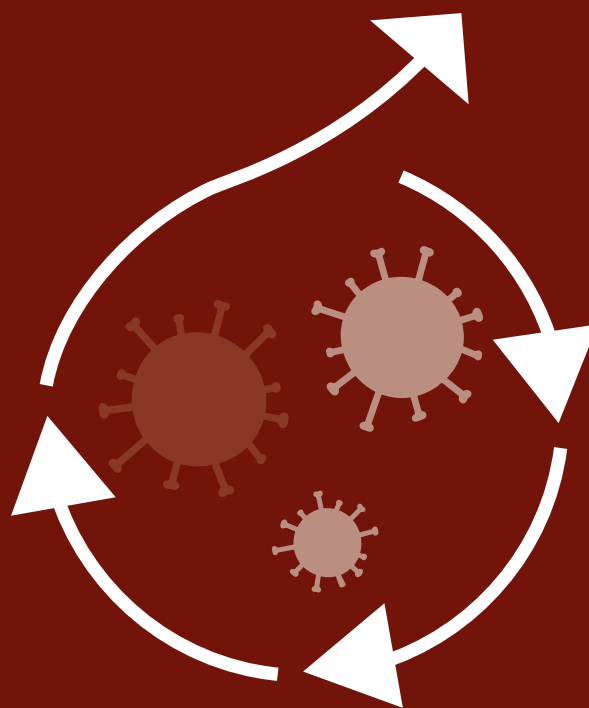
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Statistics Update

FOCUS

Restart and Reform Strategies after the Covid-19 Crisis

*Clemens Fuest, Roel Beetsma and Raymond Gradus,
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CESifo FORUM

Many European economies are gradually recovering from the corona pandemic, although it is not yet over. National governments are using the breather to assess the effectiveness of their less-conventional and short-term crisis-prevention measures. This is important because they must prepare to return to their long-term economic and fiscal priorities. These include strategies to ensure a smooth structural transformation supported by an adequate supply of skilled labor. They are also looking for a plan on what investments they need to undertake in digitization. They also want to answer the question of how they can manage the energy transition and how they can achieve the goals of climate policy. What is needed are financing concepts that keep public debt within reasonable limits

and do not place an undue burden on the welfare state. As

if that were not enough, the EU member states must simultaneously develop a clear and new vision for the future of the EU and define its role in a globalized world. In doing so, it is important to maintain a balance with national needs and priorities, among others, in recovering from the crisis. This edition of the CESifo Forum offers systematic insights into these critical and urgent policy issues in selected European countries.



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Restart and Reform Strategies after the Covid-19 Crisis

Many European economies are gradually recovering from the corona pandemic, although it is not yet over. National governments are using the breather to assess the effectiveness of their less-conventional and short-term crisis-prevention measures. This is important because they must prepare to return to their long-term economic and fiscal priorities. These include strategies to ensure a smooth structural transformation supported by an adequate supply of skilled labor. They are also looking for a plan on what investments they need to undertake in digitization. They also want to answer the question of how they can manage the energy transition and how they can achieve the goals of climate policy. What is needed are financing concepts that keep public debt within reasonable limits and do not place an undue burden on the welfare state. As if that were not enough, the EU member states must simultaneously develop a clear and new vision for the future of the EU and define its role in a globalized world. In doing so, it is important to maintain a balance with national needs and priorities, among others, in recovering from the crisis. This edition of the CESifo Forum offers systematic insights into these critical and urgent policy issues in selected European countries.

Clemens Fuest

Germany's Economic Restart after Covid-19: The Role of Fiscal Policy and Taxation

ECONOMIC CHALLENGES IN THE COMING YEARS

Germany faces considerable economic challenges in the coming years. The German economy has partially recovered from the corona crisis, but economic output has not yet returned to pre-crisis levels. At present, supply problems for many primary products are weighing on the economy, so the recovery remains fragile. In addition, the pandemic is leaving deep scars. Public debt has risen considerably in the course of the crisis. Many companies have lost customers, employees, and capital due to long closures. Young people in particular have been set back in their schooling and vocational training.

In addition, there are challenges to be met that existed even before the corona pandemic. Demographic change will lead to a decline in the number of people of working age in the coming years. The shortage of skilled workers, which has been noticeable for some time, will intensify. This reduces the potential for growth. The aging of the population will put considerable financial burdens on the public purse, especially in the social security funds. The pandemic

has accelerated the digitalization of the economy and society.

The reduction of CO₂ emissions for climate protection and adaptation to climate change, digitalization, and other forms of technical progress are leading to deep structural change. Although Germany has a very well-developed welfare state, it is to be feared that economic disparities will increase in the coming years, partly because the shortfalls in schooling caused by the pandemic will hit children and young people from educationally deprived backgrounds harder than others. It will therefore be even more important to promote inclusion and equity.

Germany also faces major challenges at the European and international level. European integration is an important driver of prosperity, but Brexit has massively weakened the EU, and in important policy areas the EU is



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not playing the role it should in the interests of all Europeans. At the same time, protectionist tendencies and geopolitical conflicts are growing internationally, especially between China and the US. After the election of Joe Biden as US president, relations with the US have greatly improved, but it cannot be ruled out that in three years' time another politician of Donald Trump's ilk will be elected. It will not be easy to safeguard German and European economic interests in this environment.

This paper focuses on the area of fiscal policy and explains what measures the next German federal government should take to address the fiscal challenges ahead.¹ Fiscal policy in the next legislature faces significant tensions and trade-offs. On the one hand, it is crucial that fiscal policy supports economic recovery and a return to steady economic growth. This suggests that tax relief and more public investment are needed. On the other hand, public debt has risen considerably during the financial crisis, and fiscal rules need to be taken into account. Therefore, the room for maneuver is limited. In addition, some political parties are calling for greater redistribution through taxes, especially by introducing a net wealth tax. This, in turn, would discourage investors and hamper economic growth. Ultimately, the weighting of the various objectives is a political judgment call. In view of the challenges described above and the still fragile economic situation, however, there is much to be said for gearing fiscal policy primarily towards promoting economic growth.

What does that mean? Economic growth is primarily driven by the development of employment, and by investment and innovation. In both areas, efficiency and productivity play a central role, as do the current drivers of structural change. A growth-oriented fiscal policy should focus on promoting employment and investment in this sense. High employment and high productivity are also crucial for inclusion, i.e., broad participation in economic growth.

The rest of the paper is structured as follows. The next section discusses reforms which aim at fostering labor supply and productivity. The third section turns to the role of tax and fiscal policy for private and public investment, followed by the fourth section which discusses the restrictions implied by fiscal rules. In the fifth section, conclusions are offered.

REFORMS TO FOSTER HIGHER EMPLOYMENT AND LABOR PRODUCTIVITY

In the last two decades, economic development in Germany has been characterized by a steady increase in the number of people in employment, partly due to more women in employment and immigration. Unem-

ployment declined and the baby boomer generation reached the peak of its productivity. This has boosted economic growth and eased the burden on government finances. However, this trend will reverse in the coming years. The labor force is aging and shrinking. A declining number of people in the labor force will go along with a growing number of retirees.

This has consequences beyond pension and healthcare spending. The shrinking and aging of the working population will also dampen economic growth. This will reduce the potential for prosperity in all areas of society. Contrary to what is often claimed, declining economic growth due to a shrinking working population also impedes the chances of successfully advancing environmental and climate protection, because this requires resources, especially innovations and investments.

Whether and to what extent economic growth actually declines, however, depends on the course set by economic and social policy. Important for the development of growth are not only the number and age structure of the workforce, but also the willingness and opportunity to participate in the labor market. Another decisive factor is the productivity of the workforce. Better education, training and health, automation and the provision of a modern capital stock, intelligent use of digital technologies, and functioning labor markets where employees are placed in the right jobs are all factors that have a significant impact on productivity. If improvements are made in these areas, this can at least partially compensate for the decline in the labor force. Fostering the immigration of skilled workers is another key factor.

Measures German policymakers should take here include:

- reforms of the Hartz IV regulations to eliminate the low-income trap,²
- an income tax reform in which marital splitting is replaced by real splitting, combined with transitional periods for existing marriages,
- a further expansion of childcare,
- promoting labor immigration, inter alia, by streamlining the visa process and appointment procedures, enhancing opti-employment opportunities during the job search (Poutvaara 2021),
- strengthening the participation of refugees already living in Germany in the labor market, and
- reforms at schools, universities, and in vocational education that promote inclusion and equal opportunities. These include Germany-wide intermediate and final examinations, structural changes for a more efficient use of resources in the education system, downstream tuition fees, and more certified continuing education (Wößmann 2021).

¹ The article is partly based on the economic policy reform program developed by the ifo Institute, which is presented in more detail in: "Wirtschaftspolitische Herausforderungen Deutschlands in der Post-Merkel-Ära – 10 Vorschläge des ifo Instituts für die kommende Legislaturperiode", *ifo Schnelldienst* 74(7), 2021.

² For details, see Blömer et al. (2019).

Through such a package of reforms, Germany could at least partially offset the growth-inhibiting effects of demographic change. These reforms only partly belong to the narrower area of fiscal policy, but they all have relevance for fiscal policy in that they have implications for public budgets.

SUPPORTING PRIVATE AND PUBLIC INVESTMENT

In addition to the measures described in the previous section to strengthen the supply of labor, private and public investment should be boosted. Important drivers for these investments are digitalization and climate protection as well as adaptation to global warming. What is controversial is what needs to be done to ensure that these investments take place.

Many companies face the challenge of making significant investments to reduce their CO₂ emissions or to seize opportunities in digitization. To enable and encourage this, the tax conditions for investment and research and development in Germany should be improved.³ This requires tax relief, or at least avoiding major tax increases.

Public debates often give the impression that the investment required is primarily public investment. This is misleading. In fact, it is primarily a matter of creating the right conditions for private investment, in climate protection above all through a transparent and comprehensive CO₂ pricing mechanism. It is also necessary to supplement the price mechanism, where it does not work, with targeted state subsidies or regulation. Public investment is also important, but it is undoubtedly the smaller part in quantitative terms.⁴

Particularly in the crucial area of decarbonization and adapting to global warming, an important task for the coming German government is to find the right combination between creating good framework conditions for private investment, targeted intervention through regulation, taxes and subsidies, and public investment. This is not easy because many of the necessary investments lie on the border between the private sector and the state, for example in the case of Deutsche Bahn, in the energy industry or in the telecommunications sector.

The problems of delimitation become clear when one examines which investments are involved. A recent study by Agora Energiewende (Krebs and Steitz 2021), has calculated an additional need for public investment of 460 billion euros in the decade until 2030, which corresponds to 46 billion euros per year, or about 1.3 percent of GDP. In the period up to 2025, 80 billion euros are already included in the financial

planning of the federal government. The total amount of 460 billion euros includes 200 billion euros for the subsidization of building insulation, i.e., a promotion of private investment. A further 140 billion euros is to flow into railways, “climate-neutral” social housing, district heating networks, and hydrogen networks. These are investments that appear to make sense, but for which there is likely to be some dispute as to whether the government should finance and manage them. This is certainly true for social housing, where models with private investors and appropriate subsidies and regulations are likely to be more efficient. In the case of hydrogen pipelines and district heating networks, at least partial private financing and control as well as risk assumption by private operators is possible. The same applies to investments in local public transport, which are emphasized by the study.

In all this, private financing is not an end in itself. It can even be counterproductive if private investors only provide financing that is usually more expensive than the government’s financing costs, but do not assume any risks. The point is to achieve greater efficiency through private-sector incentives, especially in construction, but also among operators. This only works if the private investors bear at least part of the risk.

Regardless of how the roles of public and private players are assigned, another task for the coming federal government is to speed up the planning and approval procedures for investment projects in Germany. Here, too, policymakers must deal with difficult conflicts of objectives. The participation of the local population in decisions on infrastructure projects such as power lines or railway lines is a key asset in a democratic state with the rule of law. However, if the implementation of projects is delayed by years or even decades, this form of participation is not compatible with the ambitious transformation goals that policymakers are striving for, particularly in the area of climate protection.

FISCAL RULES: THE ROLE OF THE GERMAN “DEBT BRAKE”

An important question for fiscal policy in the coming years is whether and how demands for tax relief and more public investment are compatible with the requirements of the debt brake enshrined in the German constitution as well as the European fiscal rules.⁵ European fiscal rules are not enforced very stringently, they offer a lot of flexibility, and they will likely be reformed in the coming years. The national debt brake is more binding and more difficult to change. The rules of the debt brake imply that the “structural budget deficit” of the federal government budget in Germany

³ It is obvious that there are many other politically influenced location factors that are relevant here. These include, for example, a competitively priced and secure energy supply.

⁴ In a recent study on public climate investment needs, Krebs and Steitz (2021, 2) point out that “public climate investments represent only a relatively small part of total climate investments.”

⁵ Feld et al. (2021) provides an up-to-date analysis of fiscal space in the coming years, taking into account the debt brake and European fiscal rules.

should not exceed 0.35 percent of GDP. This ceiling can be suspended in severe crises and it has been suspended for 2020 and 2021; it is likely that the suspension will also apply to 2022. In general, the deficit ceiling does not prevent higher debt for investments beyond the deficit limits, provided that these investments and their financing take place off-budget, for instance in public enterprises or other vehicles. One can criticize that these are “shadow budgets,” but given the high level of public attention paid to major investments in the context of climate policy or digitalization, one can assume that these financial transactions are sufficiently registered and discussed in the political process.

Many critics of the rules are nevertheless calling for the debt brake to be reformed in order to expand the scope for debt contained therein. Much support has been given to the idea of returning to a variant of the “golden rule” that allows credit financing of public investment. An investment-oriented debt rule applied in Germany until the introduction of the debt brake in 2009, and it did nothing to prevent the marked decline in public investment in the years between 2000 and 2008 or the steady rise in the public debt ratio in the decades before that. Moreover, as mentioned above, the debt brake hardly restricts the credit financing of at least “classic” public investment, such as in the area of infrastructure, because there is the option of financing in public enterprises or special budgets. However, the debt brake does indeed limit the scope for a growth stimulus in the form of tax relief for companies and employees. This also applies to tax subsidies for private climate-protection investments such as the aforementioned thermal insulation of buildings. However, the introduction of an investment-oriented debt rule does not help here because it does not provide for credit financing for this expenditure either.⁶

Both the tax cuts and the subsidies for thermal insulation have characteristics of public investment in that they burden public budgets today and are hoped to bring benefits in the form of higher economic output in the future. This points to a crucial weakness of investment-based debt rules—distinguishing investment from non-investment spending is difficult.

In view of these difficulties, one could come up with the idea of abolishing the debt brake altogether. However, that would be a mistake. The debt brake represents an important anchor for medium-term fiscal policy in Germany, strengthening credibility and exposing policymakers to salutary pressure to set priorities. A less far-reaching intervention would be to define a transition path, similar to the years before 2016, which would temporarily open up additional fi-

ancing leeway in the coming years (Feld et al. 2021). However, this would require a basic law amendment for which there is no majority in sight. Moreover, it would be unwise to negotiate a softening of the debt brake without a convincing and sufficiently concrete fiscal policy concept that convincingly justifies and limits the additional financing requirements. In my opinion, such a fiscal policy concept should contain the following elements:

1. A comprehensive tax reform for workers and businesses that improves incentives for labor supply, investment, and innovation. Elements of this reform could include the aforementioned reforms in the low-income sector and in spousal taxation, improved tax write-offs for investments,⁷ and expanded tax loss offsets.
2. The solidarity surcharge will be abolished for all taxpayers, and the income tax scale will be redesigned in its place. Distribution policy objectives can be incorporated into this reform. In particular, the consequences for labor supply incentives and for investment incentives of partnerships subject to income tax must be taken into account.
3. A program for public investment and support measures for private investment in climate protection, adaptation to climate change, and digitalization. In the case of support measures for private investment, it should be borne in mind that investment incentives should primarily arise from CO₂ pricing and that support should only be considered if the effects of pricing are not sufficient or the price mechanism is not effective due to existing regulations or other market frictions.

Once a convincing fiscal policy concept for strengthening growth and managing the transformation to digitalization and climate neutrality is available, it can be discussed what fiscal effects this will have and in what proportion the necessary funds should be raised through spending cuts, tax increases, or the reduction of tax subsidies and borrowing. In this context, it would be important to check carefully whether part of the required spending can be financed by spending cuts in other areas. If priorities change, so should the structure of public spending. In this process it will be clarified whether the leeway offered by the debt brake is sufficient, or whether greater leeway is temporarily required. A possible approach to creating such leeway would be to “set aside” borrowing authorizations by creating a budgetary provision while the deficit ceiling of the debt brake is suspended. Of course, whether this will legally be considered as allowed, given that the suspension is justified by the Covid-19 crisis, is an open question.

⁶ The scope for borrowing is increased to the extent that existing investments that have not been financed by borrowing are financed by borrowing in the future. Whether and to what extent this frees up funds depends, among other things, on whether the investment rule takes into account write-downs on the public capital stock.

⁷ The economic and fiscal effects of accelerated tax depreciation are analyzed in Dorn et al. (2021).

CONCLUSIONS

Restarting the economy and achieving a strong and sustainable economic recovery is challenging, not only for Germany but even more so for many other countries, in particular those hit hardest by the pandemic. It is of key importance that countries individually do what is necessary to achieve this recovery. However, many of the economic challenges before us, in particular, climate change and geopolitical shifts, require cooperation and reforms at the European and the international level. Therefore, the key task of the incoming German government will be to contribute decisively to reforms of the EU with the objective of deepening European integration in policy areas where action at the EU level creates added value.

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Roel Beetsma and Raymond Gradus

Restarting the Dutch Economy after the Covid-19 Crisis*

As was the case for most other economies in the eurozone, the Dutch economy was severely hit by the corona crisis. Yet, it is also clear that, likely due to its high degree of digitalization and the nature of its knowledge-intensive economic activities, the setback was substantially smaller than for some other economies with a sectoral structure more focused on direct interpersonal interaction, such as tourism. Also, the rather flexible labor market has been conducive in mitigating the economic downfall. Even in the midst of the crisis, unemployment hardly increased compared with the 2019 level, while there was still substantial turnover in the job market. Adding to this the massive government support, the shrinkage of the economy was in fact smaller than at the height of the global financial crisis in 2009. According to CPB (2021b), the decline of GDP in 2020 would have been 0.6 percentage point larger and unemployment would have been 65–180 thousand employees higher had no business support been given.

Now that, following a reasonably successful vaccination campaign,¹ the corona crisis seems to be drawing to an end, the following question arises: what should the government do next in terms of economic and financial policies? The background situation is one of an economic outlook improving faster than anticipated and an increasing labor shortage in many sectors, which can be explained partly by the aging of the population and partly by a mismatch between the skills of those leaving school or the university and what is demanded by employers. The number of vacancies has risen above unemployment,

which is now close to its (low) pre-corona level. Employment in hours is not yet back at its original level due to labor market withdrawals, but is expected to increase fast if the economy stays on its current trajectory. The current juncture is one of substantial uncertainty: while longer-run demand for labor will outpace its supply, a wave of bankruptcies in the aftermath of corona could temporarily alleviate labor market tightness and push employers into a wait-and-see mode. Indeed, the government has announced to wind down the general business support arrangements and will only continue to support specific sectors, such as the event industry and the tourism sector. For example, the government announced that the borrowing facility for traveling agencies will continue until the end of 2021.

Besides the aging and increasing labor shortages, the other major long-term challenge of current and future governments will be to handle the consequences of climate change and the transition from fossil to green energy. Both will require very substantial public and private sector investments. Notably, in this year's Budget Memorandum (2021), the government announced that it will invest an additional sum of over €6.8 billion in climate measures on top of the existing planned spending on climate policy in the coming years. In the following, we set out what are in our view the policy priorities after the corona crisis.

THE SUPPORT MEASURES

Most support during the corona crisis has gone to businesses, mainly through generic measures, but also through support of a number of major individual firms.² Support was initially conditional on not laying off employees. Later on, this condition was slightly relaxed. The rationale for the support was to prevent a sharp increase in unemployment and widespread business failure which, in turn, would further push up unemployment. Measured against these objectives the support policy was successful. Unemployment stayed below 4 percent in 2020, while the number of bankruptcies in 2020 is lower even than during the period before 2020 (Rabobank 2021).

The main measures on the expenditure side were a wage-cost compensation for firms with revenue losses (NOW), a compensation

* All remaining errors are our sole responsibility.

¹ End of August 2021 of those of 18 years or older 85 percent had received at least one vaccination, while more than 75 percent were fully vaccinated.

²A detailed discussion of the various support measures is contained in Beetsma and Gradus (2021).



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for fixed costs (TVL), and temporary financial support for self-employed persons (TOZO). Each time package has been extended in principle by three months, while conditions have gradually become more favorable.³ For example, while TVL was initially a fixed amount of 4,000 euros and later on the maximum was 1.2 million. These generic support measures have expired end of September 2021, after which only specific sectors such as the event industry continue to be supported. Measures have also been taken on the revenue side, mainly by allowing companies to postpone payment of corporate taxes.

The current estimates of the aggregate discretionary support are 35.4 billion euros in 2020 and 29.9 billion euros in 2021.⁴ In addition, the government has provided 50.3 and 41.6 billion in terms of guarantees in 2020, respectively 2021, of which more than half is for Next Generation EU (NextGenEU). Next to the generic support, some firms have also received individual support. The largest beneficiary was airline KLM, which received a 90 percent guarantee on a 2.4 billion loan from private creditors (part of the aforementioned total amount of guarantees), a junior loan of 1 billion from the government, and direct wage support of more than 1.2 billion euros (part of NOW).

THE ECONOMIC OUTLOOK

At the moment of writing (September 2021), the Dutch economy is recovering quickly. Table 1, taken from Beetsma and Gradus (2021), provides the most recent macroeconomic projections from the Netherlands Bureau of Economic Policy Analysis (CPB 2021a). Projected GDP growth is well above 3 percent in both 2021 and 2022. In 2020, unemployment increased by an unusually small amount for a recession (although part of the labor force withdrew from the labor market), while it is expected to fall again in 2021 and to marginally increase in 2022. After a drop in 2020, employment is expected to grow in 2021 and 2022. The public finances look healthy, with public debt peaking at less than 58 percent of GDP in 2021. The public deficit deteriorated by almost 6 percentage points between 2019 and 2020 to 4.2 percent of GDP and is set to rise further to 5.4 percent in 2021, after which it is expected to fall back to 2.3 percent in 2022 when most of the discretionary support measures have expired. Hence, the deficit is well below the ceiling of the Stability and Growth Pact when the severe economic downturn clause is expected to be de-activated (as of the start of 2023). Inflation is projected to be close to 2 percent in both 2021 and 2022, despite the pickup of economic growth and the fall in the individual saving share of disposable income.

³ In 2020, the second tranche was from 1 June till 30 September (Beetsma and Gradus 2021).

⁴ The term “discretionary” is used to distinguish this support from the working of the automatic stabilizers.

POLICY PRIORITIES

Now that corona lockdowns seem to be coming to an end, what should be the economic-financial priorities for the Dutch government to restore from the economic devastation and make the economy fit for the long term?

Shorter-run Priorities

The priorities should address both the shorter and the longer run. The cabinet took the right decision to withdraw the generic business support by 1 October 2021. Support will only be continued for specific sectors that are still hurt by corona restrictions. Indeed, there no longer is any macroeconomic rationale for generic support. The potential usefulness of any continued support would be at the microeconomic level, in terms of alleviating the personal misery of small business owners. However, for this there would be other instruments, such as subsistence support for those who need it, that do not (or to a lesser extent) distort the allocations of labor and capital of the business sector. After all, the longer the support lasts, the more firms will adjust their behavior accordingly, for example by raising their share of debt financing in the expectation that the government will come to the rescue when they become unable to service the debt (Boot 2021). Further, keeping weak firms afloat hampers the reallocation of production factors towards those firms where they can be put to the best use.⁵ This argument is of particular relevance in a labor market with an increasing shortage of qualified workers. Individuals who lose their job in a badly performing firm will easily find a new job in which they are more productive. Finally, the longer support lasts, the more opportunities firms find to abuse the support.

While the government’s quick response to corona has helped to stem the damage to the economy, be-

⁵ Interestingly, there is clear evidence that weaker firms have made more use of the corona support than stronger firms. For a large sample of Dutch firms, Roelandt et al. (2021) demonstrated that firms that were less productive and less liquid before the crisis were more likely to make use of support.

Table 1
Realizations and Projections for the Dutch Economy, in %

Year	2019	2020	2021	2022
Real GDP growth	2.0	-3.8	3.9	3.5
Unemployment level	3.4	3.8	3.4	3.5
Employment change (hours)	2.1	-2.7	2.3	1.8
Inflation (HICP)	2.7	1.1	1.9	1.8
Budget balance (GDP)	1.7	-4.2	-5.4	-2.3
Debt level (GDP)	48.5	54.3	57.5	56.5
Individual saving (disposable income)	4.5	11.6	11.4	6.8

Source: This table is taken from Beetsma and Gradus (2021). Figures in the table are based on CPB (2021a, August).

cause of the urgency the eligibility conditions were light and so were the checks on whether firms fulfilled these conditions. Based on the tax office's turnover figures in 2019 and 2020, Schellekens et al. (2021) suggest that a substantial part of the business support was eventually unjustified,⁶ because a large fraction of the firms overestimated their sales losses. This was the case for an estimated 86 percent of the firms that applied for NOW 1.0 and 79 percent of the firms that applied for NOW 2.0. The average overestimation of the revenue loss was 32 percent, while the estimated excess pay-out was 33 percent for NOW 1.0 and 37 percent for NOW 2.0, or 4.2 billion euros in total. Moreover, more than 50 percent of the firms that applied for postponement of their tax payments experienced only a limited revenue reduction or even saw their revenues increase. Both for budgetary reasons and out of fairness to the taxpayers, it will be important to claim back any of the excess support given to firms.

A related matter that will land on the policymakers' desks is how to deal with the tax liabilities built up by firms during corona. To alleviate the financial pressure on firms the government has extended the maximum term to pay taxes to 60 months. There has been discussion about forgiving (part of the) tax obligations. So far, the government has refrained from the cancellation of tax obligations. No doubt, however, once tax arrears start threatening business continuity, pressure to forgive tax obligations will increase. However, this would come at the expense of taxpayers and blunt the competitive edge of well-functioning firms that do not benefit to the same extent from forgiveness. Finally, canceling tax obligations would only alleviate indebtedness of the business sector towards the government, if other creditors do not come forward too. It would in fact be a subsidy to these other creditors, mainly banks, because they can recover a larger fraction of their own claims.

The Netherlands is one of the two countries so far not to have submitted a recovery plan in the context of NextGenEU.⁷ The current, outgoing government considers this the task of a new government. The recovery plan would require the government to specify reform measures (in areas identified earlier by the European Commission) and invest in digitalization and climate. On the one hand, there may be a reluctance in binding the next government to reforms that it may not embrace. On the other hand, however, EU funding of investment would be more than welcome, as the climate transition requires huge investments in the coming decades, such as investments in the upgrading of the capacity of the electricity grid, which will be

needed to distribute the increase in green electricity, and investments in a hydrogen infrastructure. These investments will take time to implement. Hence, the sooner these investments are started, the better. Therefore, the government (outgoing or incoming) would be advised to no longer wait and start drawing up a recovery plan. It is important to realize that the investment proposed under the recovery plan can only be a small part of the full investment agenda that we discuss below.

Long-run Challenges

The Dutch government faces a number of long-term challenges. The most important ones are dealing with an increasing shortage of labor, financing and implementing the climate transition, and the position of the Netherlands in the EU.

The Increasing Shortage of Labor

The Dutch labor market was tight before the Covid-19 crisis and now tightness is almost back at its pre-corona level. Tightness can be expected to increase further with the aging of the population. Shortages in the technical sectors are particularly large, but now they are emerging in many other sectors as well. What should be done? The government needs to develop an integral vision on how to meet long-run labor shortages.

First, invest more and better in education at all levels. While our economy is becoming increasingly knowledge-intensive, school achievements by pupils, in particular reading and calculus, are on a declining trend. This phenomenon was already present before corona struck. However, corona has given this trend an extra push. At the same time there are increasing shortages of teachers, and these shortages are largest in poor "problem" neighborhoods. While teacher jobs are increasingly complicated, with parents becoming more assertive and teachers effectively having to take more care over the children, pay is lagging market wages. Education of good teachers, with commensurate pay and differentiation in pay for those subjects that are in the highest demand, will be essential. Focus should be on improving "hard" skills of pupils and avoiding drop-out from schools. Pupils that have dropped out from schools should be targeted to resume their studies, for example by providing guarantees for an internship. "Inclusiveness of education" is becoming a buzzword in the public debate. The step described here would benefit in particular youth from weaker socio-economic backgrounds, often from minority groups. The government should also raise investment in "hardware." Many school buildings are dilapidated with unhealthy conditions inside, thus not contributing to the achievements of pupils.

While labor market participation has been on a rising trend since the turn of the century, with a sub-

⁶ It is important to note that this finding does not necessarily point to firms intentionally trying to claim more than they have a right to. The overestimation of their losses is probably mostly driven by the severe uncertainty. Moreover, a "general-equilibrium" effect may also play a role: the "excessive" support may have dampened the economic setback to such a degree that in the end it obviated a substantial fraction of support at the individual firm level.

⁷ The other country is Bulgaria.

stantial fraction of the increase taking place through part-time work, there are still large groups not actively participating in the labor market, in particular people with a migration background. Many of those who are not participating failed to make it through school and are living on social assistance and some benefits. Politically, the easiest solution is to just leave them alone. However, the economy and society would benefit if those along the sidelines are stimulated into entering the labor market, if needed after appropriate schooling. This requires a policy of active stimulation. Individuals would need to be actively targeted and be offered training, possibly with some guarantee of internship or a temporary initial job. These carrots would also need to be accompanied by financial incentives. Marginal tax rates are relatively high in the Netherlands,⁸ while the loss of benefits and various other forms of support makes it financially unattractive to trade the status of receiver of benefits for that of employee.

At the tertiary education level, the number of students in higher education has gone up dramatically, while public spending has not kept up, leading to large teacher-student ratios, thus putting pressure on the quality of the student turnout and raising work pressure on teachers. At the same time, “soft” studies such as festival management, leisure time studies, and the like, have become enormously popular. There are no incentives, other than those directly coming from the labor market, imposed on institutions of higher education to steer the relative sizes of their programs towards where the shortages are in the labor market. The game is to attract as many students as possible into programs that are relatively cheap to teach, thereby securing the financial viability of the department responsible for the teaching. Young people have a hard time to see through this. The macro-result is a mismatch between what the labor market demands and skills and knowledge of the supply on the labor market. New labor market entrants are disillusioned and end up in areas they have not studied for (so at a lower wage than needed) or they need retraining. Where the market fails more steering from above will be needed.

More investment in education will not be sufficient to eliminate future labor shortages. Life expectancy continues to rise and to finance these higher pension and healthcare costs people need to work longer. This is indeed happening. The number of people above 60 years who still work, full-time or part-time, has increased enormously since the turn of the century, partly because the official retirement age (for a public pension) has gone up and because elderly workers are in a better shape than before. Importantly, for the future there is also an automatic link between the (potential) increase of life-expectancy and age for the public pension. This makes it

worthwhile for employers to invest through on-the-job training and courses in the skills of workers who are over 50 years, and it makes it worthwhile for the employees themselves to beef up their earnings capacity and remain attractive for the labor market.

A final source of labor would be immigration. Immigration of unskilled labor, often economic refugees, is unlikely to contribute significantly to solving labor market tensions. Language barriers and cultural differences make absorption in the workforce difficult. Unemployment of people coming from Morocco and the Antilles is three times higher than average and for Turkish people it is 2.5 times higher. Immigration of skilled labor does contribute to reducing shortages in areas of high demand. This is what is already happening. There is a substantial net inflow of foreign students, a fraction of which start their working career in the Netherlands. Companies in technical sectors “import” high-skilled foreigners on a large scale. Unfortunately, the number of years during which they receive a tax advantage has been reduced.⁹

Climate Policy

The Dutch government has spent billions in subsidies to stimulate driving electrically and for the production of renewable energy. The cost of reducing emissions per tonne CO₂ has been extremely high.¹⁰ Fortunately, the aforementioned subsidies are being built down. There are better ways to spend public resources on dealing with climate change. Indeed, an enormous investment agenda lies ahead, both in terms of the energy transition and in terms of protectionary measures against natural disasters resulting from climate change. The latter would aim at dealing better with extreme weather in the form of droughts, flood from the rivers entering the country, and the rising sea level.

The energy transition requires a long-term investment agenda in which the private and public sector collaborate. Such long-term agenda is needed to provide the security needed to involve private parties, who have been complaining about the government changing its policies all the time. The main investments concern setting up parks that produce wind and solar energy and infrastructure investment, in particular increasing the capacity of the electricity grid (to enable the transportation of green electricity) and in the infrastructure for the transportation of hydrogen to be used mainly by the energy-intensive industry. It is important to realize that, along with the cost of financing these investments, there will also be a benefit in terms of innovation that increases the

⁹ This is the so-called “30 percent rule”: essentially income taxes are levied on 70 percent of gross income.

¹⁰ According to a study by Dutch court of audit the cost of reducing emissions per tonne CO₂ by electronic cars was in 2018 approximately 1,700 euros. Gradus et al. (2017) shows a saving of 1 tonne of CO₂ through plastic recycling costs 180 euros in the Netherlands—also far higher than alternatives for saving CO₂, such as wind energy (€30).

⁸ The highest marginal income tax rate of 49.5 percent sets in at a relatively low level of income.

efficiency of the transition and that may produce new export opportunities.

While with falling costs, investments in solar and wind energy production currently earn themselves back, the role of the government in bringing about the necessary infrastructure investments will be crucial. First, the government would need to initiate major infrastructure investments and coordinate these projects with the various private parties involved. Second, the government may need to provide co-financing or guarantees to the private parties involved. Beetsma et al. (2021) propose to set up a public-private investment bank designed specifically for the financing of these infrastructure projects. New public resources would not be needed, because the bank would replace the so-called Invest-NL and National Growth Fund, which are funded by the government to (help) finance growth-promoting investments. The bank would hold a long-term view with regard to its investments and not be subject to daily pressures from financial markets. This would also facilitate long-term commitments by the government. It would also draw in the right type of investors, which includes pension funds and insurance companies since they have long-term liabilities. However, other financiers with a long-term perspective would also be welcome. The presence of private sector parties is crucial, though. On the one hand, they provide part of the financing and share in the revenues and risks. On the other hand, they encourage a business approach, in which investment projects will be evaluated in the same way as regular commercial investment projects are evaluated for selection.

Stance on the EU

Unlike some other countries, and despite the importance of the EU internal market for the Netherlands, the Dutch political establishment does not seem to have a clear position as to the direction in which they would like to see the EU to develop and what should be the Dutch position in the EU. The consequences can be damaging. For example, mainstream politics is critical of new arrangements involving transfers to other parts of the EU but does not form a view on how they should be designed if the Netherlands is confronted with such plans by the Commission or other countries. This was the case with NextGenEU, which was backed by Germany, the most important partner country. Not participating was not an option, while the room for having its design amended was very limited. The report by the European Economy Expert Group (2021) describes four possible “integration preferences” (on the side of the Dutch government) with consistent policy packages leading towards a

stable and resilient European economy. These preferences differ in terms of speed (gradual or accelerated), uniformity (all Member States simultaneously, or multi-speed), and the main mechanism (policy coordination or market discipline). Besides this, it will be important for Dutch politics to realize that the Netherlands is a geo-political dwarf and that, if it has the ambition to exert any influence in the world arena, this should be done as part of the EU as a bloc.

CONCLUDING REMARKS

Now that the corona-pandemic is largely behind us and the Dutch economy is recovering quickly, its government needs to return to its long-run policy priorities. This would require a long-term strategy in terms of how to secure a sufficient supply of qualified labor to keep the economy going and a plan on the appropriate investments in the energy transition and in dealing with the consequences of climate change, and how to finance these investments. Besides these, the government needs to develop a view on how it would like to see EU develop and what would be the place of the Netherlands in the EU.

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Rethinking UK Economic Policy

In common with counterparts in other advanced economies, the UK government reacted quickly to the economic threats from Covid and adopted wide-ranging policies to cushion the economy. Some of these policies were designed and implemented at very short notice, notably a “furlough” scheme to support workers forced to cease activity because of lockdown restrictions.

As the economy recovers, the UK has to contend with not just the aftermath of the pandemic, but also the dislocations resulting from exiting the European Union. In addition, the government has committed itself to a range of strategic policy shifts, some associated with Brexit and others from domestic policy commitments. This article provides an overview of the policy responses, discusses how macroeconomic conditions are evolving, looks at the emerging policy approaches, and assesses the choices made.

RESPONSES TO THE PANDEMIC: A MIXED RECORD

In many respects, the UK’s economic policy responses to Covid-19 deserve praise. The furlough scheme appears to have succeeded in keeping workers connected to the labor market and was adapted pragmatically, both in duration and coverage (including the self-employed), as the pandemic evolved. Similarly, emergency “business interruption” loans were offered to companies, initially to SMEs, then also to larger firms. Subsequently the government introduced “bounce back loans” aimed at supporting the recovery.

The Bank of England acted quickly to cut interest rates in March 2020 to the rock-bottom rate of 0.1 percent and worked closely with the government to introduce additional borrowing facilities for both corporates and the banks. There had already been a large-scale program of quantitative easing after the global financial crisis. Also, the Bank eased capital requirements on lenders, and agreed with leading banks to suspend dividend payments and curb bonuses as ways of shoring up financial stability.

During the most acute phases of the pandemic, the government substantially increased spending on the National Health Service (NHS), but its management of the crisis has a mixed record. What rapidly became clear was that the contingency planning was geared towards a flu epidemic and not a new pathogen about which little was known. A lack of personal protective equipment and testing capability were just two of the well-publicized failings, and a policy of decanting elderly patients from hospitals into care

homes or the community contributed to a high number of deaths.

In contrast, quickly taken decisions on investing in research and on placing advance orders greatly facilitated the development and authorization of vaccines, followed by their early rollout to citizens. The combination of the vaccination programs, use of private hospitals, the postponement of routine medical procedures, and the construction at short notice of “Nightingale” hospitals (barely used in the end), enabled the NHS to avoid being overrun.

A first re-opening of the economy in August 2020 proved to be premature and was reversed to be replaced by a more cautious phased approach between March and July 2021. Even so, new infections continue to be recorded at a rate of over one million new cases per month since early summer 2021.

A temporary uplift of GBP 20 per week in the main social benefit, Universal Credit (paid to those on low wages, as well as those not in employment), was adopted early in the pandemic and came to be regarded as a vital element in limiting adverse distributive effects of lockdown. By ending the top-up payment at the end of September 2021, the government has been accused of neglecting poorer people, especially at a time when energy bills are rising. However, recent measures to offset these losses were subsequently introduced, notably a rise in the minimum wage by more than inflation and easing of the ‘taper’ of benefits as workers earn more, enabling them to retain a higher proportion of the benefit payment.

MACROECONOMIC CONDITIONS

After a decade of austerity policies aimed at gradual consolidation of the public finances, the pre-Covid current balance was close to balance and the debt level had been falling slightly from its peak of around 80 percent of GDP in the first half of the 2010s. The government had fiscal space to enable a Keynesian response to the pandemic and the jump in the deficit was of the order of 14 percentage points of GDP in the fiscal year 2020-21, with debt rising to its highest level for sixty years. Despite the rising deficit and debt, the financing costs have remained low, with the government able to borrow on very favorable terms.



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Concerns are now being expressed about the consequences of the conjunction of loose fiscal and monetary policy. Inflation, long quiescent, has crept upwards and is expected to reach 4 percent by the end of 2021. Initially, the Bank of England suggested that rising prices were largely attributable to one-off factors and would soon moderate. Andrew Bailey, the Governor of the Bank of England, explained that while there are supply challenges, they do not (or do not yet) justify a change of direction in monetary policy (Bailey 2021). Rising energy prices and pressures on employers to raise wages to attract scarce workers have, however, made a wage-price spiral more likely. If interest rates do start to normalize, the high debt burden would be a problem not just for the public sector, but for those companies which have used borrowing to cushion the effects of the pandemic.

The labor market is puzzling. There was only a small increase in unemployment during the pandemic-induced recession and the most recent data reveal a record number of job vacancies which now stand at 1.1 million (up by 30 percent from the pre-pandemic level of the first quarter of 2020).¹ Total employment fell during the pandemic, but is again showing strong growth. Bailey wonders whether the labor market is, as he puts it on the cusp “of a more far-reaching structural change in the economy which alters relative pay across occupations?” He notes that such changes do arise from time to time, citing the widening of the gap between higher and lower earners in the 1980s.

Although it is difficult at this stage to ascertain whether jobs supported by the furlough scheme until the end of September will remain viable, disruption in the labor market seems unavoidable. Certainly, the messages emanating from government suggest transformation of the labor market is a core policy objective. A sizeable² number of workers moved to the UK because of free movement inside the EU, especially after 2003; however, some of these workers have opted to leave as a result of Brexit and the pandemic. Because of this supply of workers, an emerging policy narrative suggests wages were lower and employers had few incentives to train indigenous workers. In addition, companies faced disincentives to invest, precisely because they could use cheaper labor, especially for lower skill occupations.

These assertions are open to challenge and the empirical evidence is mixed, as Jonathan Portes has shown in a 2018 review, with the effects generally found to be at most minor. Work by the Migration Observatory at the University of Oxford (2020) finds a greater effect on lower wage occupations, but stresses the need for nuanced interpretation. Rising wages in some sectors where foreign workers have left in

substantial numbers because of the conjunction of the pandemic and Brexit might suggest a more pronounced effect, but firm conclusions must await further research.

Despite these ambiguities, the current thrust of policy is to restrict work visas for lower paid foreign workers. Instead, preference will be given to migrant workers able to fill shortages in skilled occupations. This policy was brought into sharp focus by the sudden shortage of heavy goods vehicle drivers, even though it is a longstanding problem across Europe, and the government was forced to relent by allowing temporary work visas. But its aim remains to push employers to adjust wages as the means of dealing with shortages, while accelerating the rate of innovation. This ambition of creating a high wage, high productivity economy is alluring, but against a backdrop of a lackluster productivity growth in the decade prior to the pandemic, such a transformation will need more than optimistic words.

TOWARDS RECOVERY

Partly in response to the dislocations from Covid, but partly also because of the manifesto commitments of the Conservative Party which won the 2019 general election, the government in 2021 set out a plan for growth entitled *Build Back Better*.³ The slogan is not original and is used elsewhere, but the plan has a number of key features distinctive to the UK, highlighting several longstanding weaknesses, ranging from skills to innovation, and proposes policies to correct them.

Infrastructure is given considerable prominence. The plan states bluntly that the “quality of our infrastructure is lower than many other countries,” and recalls the large amounts already proposed a year earlier for a *National Infrastructure Strategy*. In cash terms, the provisions for infrastructure investment in the period 2021–25 are expected to increase by at least two-thirds the amounts spent in the period 2016–20. These plans are, as always, open to review and there are continuing campaigns against some of the most high-profile components, notably the HS2 (high-speed) rail link from London to the north of England.

A long overdue element of the plan is to accelerate the delivery of major investment programs—the optimistically named “Project Speed”—including using the opportunity of Brexit to simplify procurement processes. However, it is not only cynics who will wonder whether such ambitions can be realized, given the poor past record of the UK in deciding on, and completing, major infrastructure projects. High-profile examples include the repeated delays in completing London’s “Crossrail,” now expected to open in the

¹ See <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/jobsandvacanciesintheuk/october2021>.

² Recent figures, based on those applying for settled status following Brexit, suggest the headline total might be some 2 million higher than the 3.7 million previously estimated.

³ See https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/969275/PfG_Final_print_Plan_for_Growth_Print.pdf.

first semester of 2022, over three years late, and the procrastination in agreeing on, let alone building, new airport runway capacity in South-East England.

LEVELLING-UP

A key promise to the electorate from the Johnson government was to promote “levelling-up,” aimed at communities—especially in the Midlands and North of England—perceived to have been relative losers from the economic effects of market liberalization and integration in recent decades. Although the intuitive meaning of the term is obvious, the government (and Johnson in particular) has been criticized for being vague about what the policy will mean in practice. It is expected to encompass spatially targeted boosts to education, skills, transport, and other infrastructure, along with the fostering of innovation and various other forms of support. In presenting his budget on 27 October 2021 formally confirmed a variety of new or additional allocations of funding, including a hefty £7 billion for transport in the midlands and north of England.

New financing mechanisms are being established to support place-based economic development. However, there are few details as yet on their scope and capabilities, making it hard to assess their likely impact. A new Shared Prosperity Fund is due to be launched in April 2022 and has been described in the House of Commons⁴ as “the successor to EU structural funds, with decisions about how taxpayers’ money is spent being taken in the United Kingdom, rather than in Brussels.” The government has asserted that it will at least match the funding previously received from the EU funds, although it is worth recalling that in the run-up to Brexit, UK receipts from these sources had shrunk compared with previous decades to around GBP 1.5 billion per annum.

The distribution of the funding is, however, likely to differ from the most recent allocations from the EU in which only two regions (Cornwall and the Isles of Scilly, and West Wales and the Valleys) were eligible for the highest levels of support. Moreover, the role of central government will be enhanced, potentially leading to clashes with the devolved administrations (Northern Ireland, Scotland, and Wales) or English local governments accustomed to having the relevant powers under EU Cohesion Policy. According to the Institute for Government (2021) this arrangement “risks damaging trust between the UK and devolved administrations and undermining the UK government’s key objective of binding the four nations of the UK closer together.”

Also at issue is the approach to regional policy. Under EU Cohesion Policy, a notable feature was the strategic nature of programs, both in relation to the broad thematic coverage of policy support and its

duration. Although attention has been drawn to this aspect of future policy by various commentators, it remains uncertain whether some of the features central to EU regional policy will be adopted.

One recent innovation is the designation of a number of “freeports,” spread across the country, reversing a decision taken in 2012 to close the then existing ones. Freeports are intended to provide opportunities for business to locate in areas with much reduced administrative obligations and customs rules and are, de facto, akin to export processing zone across the world. Whether they will succeed in attracting new inward investment to post-Brexit UK or fall victim to the same sort of displacement effects that affected previous initiatives of this sort is one of many open questions about these policies.

TRADE POLICY

Like many other advanced economies, the UK has become acutely aware during the pandemic of its vulnerability to supply-chain bottlenecks. There have been hints from policymakers about wanting action to promote import substitution, but the language stops short of the “strategic autonomy” discourse promoted by a number of EU leaders. One explanation is that the UK already faces significant trade policy challenges in the aftermath of Brexit. In this context, the term “global Britain” has been much used by government ministers, implying a pivot away from the EU as the principal trading partner.

After the freight negotiations leading to the Trade and Cooperation Agreement concluded at the end of 2020, the UK continues to have free trade in goods with the EU, but even so there are increased frictions at the borders. Brexit was always susceptible to such frictions, adding to the costs of trade with the EU. The particular difficulties in Northern Ireland—with a political choice made to create a de facto border in the Irish Sea, so as to avoid one on the island of Ireland—are giving rise to significant challenges. There are also new barriers to trade in services, especially affecting the UK’s competitive financial and business services sectors. Government policy is to try to mitigate these barriers and frictions, but it will be difficult in the face of resistance from the EU side.

In parallel, the UK is keen to use its freedom from EU rules to conclude new trade deals. There has been success in rolling over many of the deals to which the UK was previously party because of its EU membership, and it is even claimed that in some cases (for example, Japan) the new deal goes further. But the prize of a deal with the US is looking increasingly unlikely. Some new deals may offer new opportunities—Australia is one such example—but it is doubtful how much impact they will have because of the limited scope for increasing total UK trade to these partners.

⁴ See <https://hansard.parliament.uk/Commons/2021-06-23/debates/DCA75415-E60F-4ACD-81D3-9EA18A69D9F2/Scotland>.

HEALTH

In health, emergency measures have caused a lengthening of waiting lists for other medical conditions and have pushed the government to find additional resources for the NHS. The government has also announced its intention to boost provision for social care, with the aim of resolving the shortcomings of a system that successive governments have recognized, but failed (or lacked the political will) to address. A decision to fund these increased social outlays by increasing national insurance—a levy on labor, paid by both employers and employees, though not hypothecated completely to social spending as in many continental European systems—has provoked objections about its fairness. Critics argue that it penalizes the current workforce in order to protect the capital of the economically inactive, and would have preferred some form of wealth tax (notably on property owners).

ASSESSMENT

Much of UK economic policy is in flux as the government tries to construct a post-Brexit economic model, while also building on lessons from the pandemic. Ambitious, but costly, plans for moving earlier to “net-zero” carbon emissions have also been set out by the government, keen to set a good example for other participants in the CoP 26 summit in Glasgow. These and other spending decisions taken since summer 2021 will mean the share of public expenditure in the economy rising from a pre-pandemic level of just under 40 percent of GDP, to 45 percent in the 2021-22 fiscal year before settling at around 42 percent in the following two fiscal years (HM Treasury 2021).

However, despite sanguine rhetoric from the Prime Minister and other ministers, the UK economy also continues to be under the shadow of Brexit. Many of its effects had been predicted and should not have come as surprise, but were masked by the pandemic and it is only latterly that some of the consequences have become visible.

There was considerable pessimism in the course of 2020 about the magnitude of the economic downturn and the time it would take to return to the pre-Covid level of GDP, with many projections placing the UK at the lower end of the OECD league tables. However, the outlook improved subsequently, despite a renewed surge of infections early in 2021, and revised data for the second quarter of 2021 showed higher growth than previously estimated. The projections announced in the 27 October budget speech by Rishi Sunak, the Chancellor of the Exchequer, suggest UK GDP will be back to its pre-pandemic level by mid-2022.

This improved growth trajectory, as the Institute for Fiscal Studies (2021) makes clear in its October

2021 commentary and Sunak has now confirmed, greatly improves the outlook for the public finances compared with the government’s projections from as recently as spring 2021. In addition to the beneficial effects of strong growth, tax rises already in the pipeline will add to revenue. An objection from many in the Conservative Party is, however, that these rises will raise the share of tax as a proportion of GDP and boost rather than curb the role of the state in the economy.

While the latest growth forecasts are encouraging, there is hesitation about cutting-back on measures to stimulate economic activity because of uncertainty about whether the recent spike in inflation will prove temporary or not, and a reluctance to put the recovery at risk by implementing a premature fiscal consolidation. Deciding on and restoring credible fiscal rules will soon be on the agenda and could well provoke disputes at a time when big increases in expenditure have been announced.

In conclusion, the UK is undertaking potentially far-reaching economic policy developments, but they are at a relatively early stage and achieving them will be difficult. There are worries about the UK becoming more prone than elsewhere to a period of stagflation as a result of cost-push pressures, rising interest rates and higher taxes. Sunak has gambled on growth being the answer, enabling him to honor the government’s many spending commitments without putting fiscal sustainability at risk. More generally, in the face of so many uncertainties and a patchy track-record in policy delivery, the question is whether outcomes can match the expectations that have been engendered. Interesting times lie ahead.

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Torben M. Andersen

Economic Policy during the Pandemic and Lessons for the Future – The Case of Denmark

Denmark experienced two severe waves during the Covid-19 pandemic: in the spring of 2020, and towards the end of 2020 and the first quarter of 2021. In response to this, various restrictions and lockdowns were imposed of roughly the same stringency across the two periods. During both lockdown periods, various economic relief measures were in force, including both conventional and unconventional policy measures. In autumn 2021, essentially all restrictions (except on travel) were lifted against low case numbers and a large fraction of the population being vaccinated.¹

The economic developments are summarized in Figure 1, showing both GDP and employment, respectively. On impact, there was a steep decline in economic activity in the second quarter of 2020, although less severe than in most other countries. Next, economic activity recovered alongside re-openings, followed by a new setback during the second lockdown period, though less severe than during the first lockdown period. By the second quarter of 2021, economic activity and employment are back to the end of 2019-levels. This is a swifter recovery than even the most optimistic forecasts implied, and the economic policy debate is now focusing on overheating and the risk of shortage of labor, which may seem surreal given the agenda just a few months ago.

From an economic perspective, the corona-crisis is unusual in several ways. The crisis was induced by a health shock leading to various lockdown measures. Unconventional policy measures had to be deployed to support production capacity and job-matches and provide income insurance. Although activity decreased—in part due to behavioral responses—traditional aggregate demand measures to support economic activity were not appropriate, since they would conflict with health concerns to reduce physical contact. The decline in activity was more abrupt than in a typical business cycle downturn, including the experience during past crises like the financial crisis. Finally, the recovery in activity has been unusually quick, not least seen in the perspective of the large initial decline in activity. The crisis does not, therefore, seem to be associated with the same degree of persistence mechanisms seen in typical business cycle downturns.

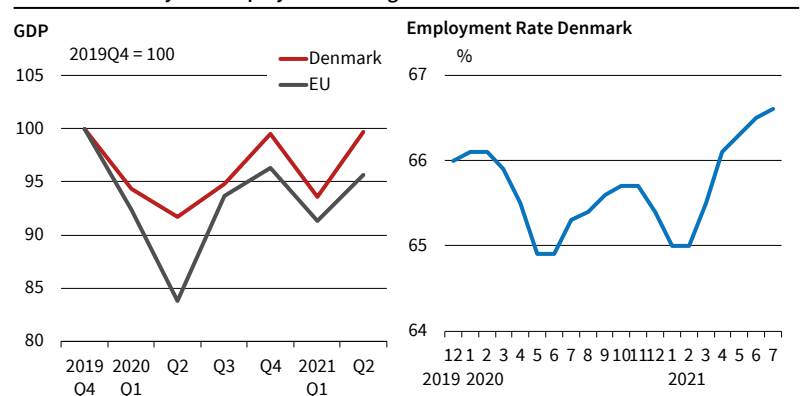
¹ Re-openings were at first based on extensive testing, and a corona-passport requiring either a negative Covid-19 test (valid for 72 hours) or full vaccination was a pre-condition for participation in various activities.

In comparative perspective, the health outcomes² and economic consequences of the Covid-19 pandemic are less severe in Denmark than in most other countries. It is now well understood that both the health and economic implications of the corona pandemic and lockdown policies depend not only on health and economic policies but also on behavioral responses, country characteristics including population structure, urbanization, health care system, sector structure, degree of digitalization, and the economic situation at the eve of the corona pandemic – see e.g., Furceri et al. (2021). In the Danish case, it is important that the economy did not suffer from any major disequilibria at the onset of the pandemic, and a high degree of digitalization, among other things, contributed to resilience.

This paper discusses economic policies in Denmark during the pandemic. Since lockdown policies aim at reducing physical contacts and therefore also as a consequence economic activity, the focus is on supporting the production capacity and incomes so as to make a quick recovery feasible when lockdown restrictions can be lifted. The paper first gives a broad overview of policies—conventional and unconventional—pursued in Denmark, and then discusses the outcomes. The paper ends by summarizing a few lessons from the crisis for the future policy-making.

² Cumulative confirmed Covid-19 deaths as of 17 September 2021 are 451 persons, which is among the lowest among OECD countries.

Figure 1
Economic Activity and Employment during the Covid-19 Pandemic



Source: Eurostat; Statistics Denmark.

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RELIEF PACKAGES

The lockdown restrictions were accompanied by several economic measures, mostly comprising non-conventional measures. These emergency or relief packages have several justifications, but from a household and firm perspective it is important that they offer insurance against and compensation for the direct consequences of the crisis. From a macro perspective, the schemes aim at protecting production capacity (job-matches, avoiding firm closure) to support a swift recovery when the economy is re-opened; a V-path for economic activity. This is essential in order to avoid the pandemic causing a more persistent decline in economic activity, which in turn could cause an increase in long-term unemployment and a more prolonged downturn. This also has an efficiency argument, since firm closure and lay-offs followed by start-ups and new hiring are associated with transaction costs and frictions, which can be avoided by maintaining production capacity and job matches. Clearly, this argument applies to lockdowns with relatively short duration only, since these measures also have a status quo bias detrimental to adjustment and flexibility.

The measures used were essentially the same during the two rounds of lockdowns. They were introduced shortly after the first lockdowns in March 2020. In the late spring of 2020, the lockdowns were lifted, and the emergency packages were subsequently phased out. During the autumn, some specific and targeted measures remained in place, and during the second round of lockdowns the general emergency packages were re-introduced. In both waves, emergency packages were phased out over a time window allowing some time for adjustment. The sequencing is illustrated in Figure 2, showing the number of persons on wage compensation (see below) during 2020 and 2021. The relief packages were launched with a sunset clause (although there were some extensions), but in reality the phasing-out was contingent on the re-openings, and in the two major rounds the phasing-out was based on recommendations from an economic expert group (Andersen et al. 2020 and 2021).

The key argument for the quick phasing-out of the relief-packages was that they were justified only during lockdowns, and maintaining them for too long would impair adjustment and flexibility.

The following outlines the main instruments used in Denmark (see also Figure 3). A number of schemes were directed at firms to avoid liquidity problems developing into solvency problems, causing firm closures. Various schemes targeted liquidity via the tax system, including postponement of payments of VAT and income taxes (which in Denmark are collected via firms), zero-interest rate loans based on previous payments of taxes, VAT etc., and more flexible arrangements of payment of taxes. In total these measures amount to about 25 percent of GDP. This was supplemented by guarantee and loan arrangements with schemes for both small- and medium-sized companies and large companies. There were also schemes matching private loans with public loans and expanded guarantees for export.

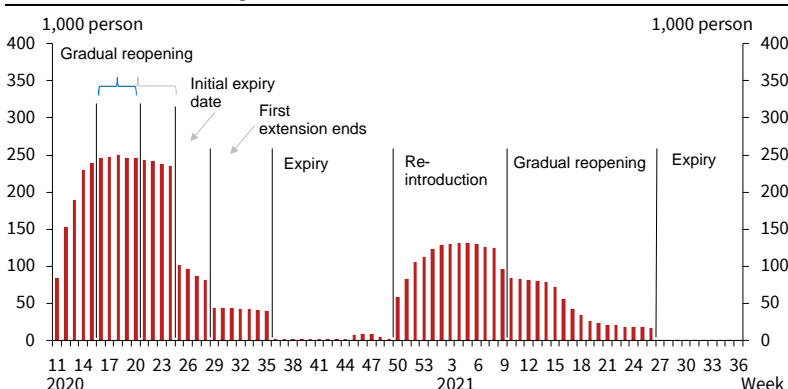
Compensation for fixed costs was available to firms provided turnover had decreased at least 30 percent (compared to the similar month in 2019), and the compensation depended on the decrease in turnover up to a maximum of 90 percent. Firms under full lockdown were entitled to 100 percent compensation.

The self-employed could obtain compensation provided the decrease in turnover was at least 30 percent. The compensation depended on the decrease in turnover and could not exceed 90 percent. In case of full lockdown, the compensation was 100 percent. Until December 2020, the maximum compensation was DKK 23,000 (3,090 euros) per month, and then it increased to DKK 33,000 (4,430 euros) per month for self-employed with employees, and DKK 30,000 (4,030 euros) for others.

To project job-matches for the benefit of both firms and workers, a new scheme—wage compensation—was introduced. Denmark did not have a general work-sharing scheme at the onset of the pandemic. A specific arrangement does exist for a small subset of the labor market, with specific rules for the extent of work-sharing, and workers receive (supplementary) unemployment benefits for periods not working (if eligible for unemployment insurance, which is a voluntary contribution-based scheme).

A temporary so-called wage compensation scheme was introduced for employers laying off 30 percent of their workforce or more than 50 employees. The worker on wage compensation maintained the normal wage, and the firm was compensated by 75 percent of wage expenditures for white-collar workers and 90 percent for blue-collar workers, up to a cap of DKK 30,000 (4,040 euros) per month (the maximum unemployment benefit is about DKK 19,000 (2,550 euros) per month). The different compensation rates were motivated by the fact that it is easier to layoff blue-collar workers, and the cap by high wages

Figure 2
Number of Persons on Wage Compensation



Source: Andersen et al. (2021); www.erhvervsstyrelsen.dk.

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applying to workers where the firm has a self-interest in maintaining the job match and thus should contribute more to the financing.

Since the wage compensation scheme was explicitly tied to lockdown restrictions and thus phased out alongside re-openings (see Figure 2), and the old system was considered inadequate, there was a tripartite agreement on a temporary work-sharing (running to the end of 2021) allowing firms flexibility in reducing working time by at least 20 percent and at most 50 percent (later changed to 80 percent). Workers received (supplementary) unemployment benefits for hours not working, but the cap on the maximum benefit payment was increased from about DKK 19,000 (2,550 euros) per month to DKK 23,000 (3,090 euros) per month. Moreover, there was an amnesty for the non-insured to join the unemployment insurance scheme, waiving the usual waiting period provided a higher contribution was paid.

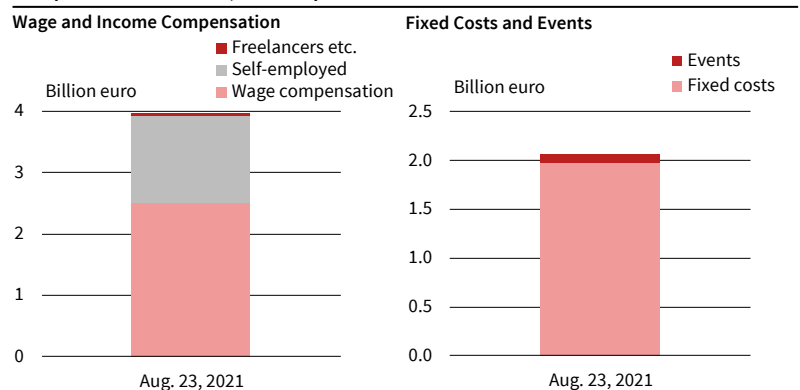
In addition, there were various other schemes, e.g., compensation for freelancers, organizers of big events, media and culture, etc. There were also changes in the unemployment benefit and social assistance scheme to prevent individuals losing support.

As noted, the general compensation schemes applied during the two lockdown phases: in between, some specific schemes were still in place. There have also been some adjustments over time. For example, the compensation for fixed costs was changed to reduce the incentive problem caused by small increases in turnover, resulting in a sharp decrease in compensation. During the autumn of 2020, there was a scheme for firms affected by second-round effects targeting export-oriented firms (which turned out not to be a significant problem). In 2021, there was an issue on how to target firms still affected despite the general re-opening, and a scheme allowing compensation for fixed costs in case of a larger reduction in turnover was maintained but the cut-off point increased (from a 30 percent to a 45 percent decrease in turnover). Figure 3 gives an overview of the compensations paid out on the various schemes.

In Denmark, a part of wage income (typically 12.5 percent) is reserved for a holiday-allowance paid out during holiday periods. In the past, holiday allowances depended on wage income earned in a previous period (i.e., there was a lag between accrual of holiday allowances and the pay-out period). A recent reform synchronized the earnings and the holiday period, and to avoid a double pay-out of holiday allowance, one part was frozen until retirement. In response to the Covid-19 crisis, it was decided to allow individuals to demand pay-out of the frozen holiday allowances in two rounds (autumn 2020 and early 2021). Since holiday allowances are taxable income, this measure is thus an example of an (unconventional) aggregate demand policy which simultaneously directly improved disposable income of households and tax revenue.

Figure 3

Compensation Schemes, Total Expenditure



Source: Erhvervsstyrelsen.

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In the autumn of 2020, holiday pay corresponding to 31 billion DKK (1.4 percent of GDP) were paid out, and in early 2021 22 billion DKK (1 percent of GDP). This had a considerable impact on disposable income of households.

The Ministry of Finance (2021) assesses that the direct costs of the Covid-19 crisis (relief packages, health measures, etc.) amount to 1.6 percent of GDP in 2020 and 1.3 percent in 2021. However, the “unfreezing” of the holiday allowance increased tax revenue by about 0.9 percent of GDP in 2020 and 0.6 percent in 2021. Overall, fiscal policy has been very expansionary in this period. According to the Ministry of Finance (2021), the discretionary measures have increased GDP by 1.9 percent in 2020 and by 1.3 percent in 2021.

Denmark entered the pandemic with sound public finances, and at the outset political signals were made that there was fiscal space to cope with the crisis. Although public finances were affected, it was relatively mild compared to most other countries. The budget deficit was 1.1 percent of GDP in 2020, 3.1 percent in 2021, and 0.6 percent of GDP in 2022 (Ministry of Finance 2021). The country also entered the crisis with a relatively low debt level, among the lowest in the EU. The EMU debt was 33 percent of GDP in 2019. As a result of the pandemic debt has been increasing, peaking at about 42 percent of GDP (also due to the decline in GDP) and will eventually fall again according to projections. Throughout, the public net-wealth position remains positive.

ECONOMIC DEVELOPMENTS

The economic development has largely been consistent with the V-logic underlying the emergency packages that they would make a quick recovery possible, although the actual development (see Figure 1) looks more like a W-path due to the two lockdown rounds. The lockdowns following the Covid-19 pandemic have both a supply and a demand component; firms are constrained in their possibilities to sell, and demanders in their possibilities to buy. The emergency packages allowed many firms to retain valu-

able job-matches and production capacity (avoiding bankruptcy), but they also protected the income of workers and hence consumers, supporting consumer confidence and avoiding increases in precautionary savings – see Andersen et al. (2021a).

Supporting production capacity is a necessary condition for a swift recovery, but it is not sufficient, since aggregate demand should also be in place, and therefore a two-handed approach is required: maintaining capacity and supporting demand. If successful, this prevents a sharp and deep decline in economic activity from releasing a prolonged downturn. It is a classical business cycle mechanism that recessions are persistent via several mechanisms, including frictions in job matching and decreases in aggregate demand. These mechanisms were muted or neutralized by the policy initiatives. It should be noted that Denmark entered the Covid-19 crisis with a well-performing economy, including low unemployment and sound public finances due to previous consolidation and reforms. Consequently, there was fiscal space to pursue rather aggressive policies in terms of emergency packages, but also more traditional fiscal policy measures. Moreover, there are no disequilibria to resolve as during, e.g., the financial crisis.

The swift recovery is documented in Figure 1. It is instructive to look in more detail at the labor market response and the role of the wage compensation scheme. A particular concern in any downturn is that increased unemployment turns into a persistent increase, which eventually may increase structural unemployment. This has been prevented, and the wage compensation scheme plays an important role as a temporary relief measure supporting job matches and incomes. About 90 percent of those on wage compensation in April 2020 when the first wave of the crisis was at its top were in employment in October 2020 (see Figure 4). This is very close to normality, since there are always in- and outflows from the labor market (retirement, sickness, etc.). It shows both the role of this relief measure and the importance of phasing it out swiftly alongside

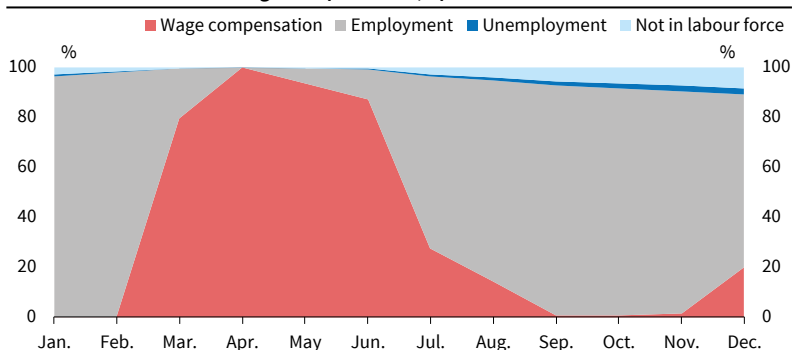
removal of lockdown restrictions. In addition, the number of firm closures has been very small and below the normal level.

Another noteworthy observation is that the decline in economic activity during the second lockdown period was smaller than during the first round, despite the lockdowns being at about the same level. This indicates adjustments and adaptability to the new situation via numerous channels, including more “working from home” and adaptation of sales channels (click and collect, e-commerce, virtual meetings, teaching, etc.). A high level of digitalization is essential to resilience, making it easier to substitute virtual contacts for physical contacts, and Denmark ranks in the top on digital skills and a high-capacity network. It probably also played a role that vaccines were rolled out, which contributed to reducing uncertainty on future prospects.

Underlying demand, there is both intersectoral and intertemporal substitution. The former applies to demand shifting from contact intensive forms to other activities, e.g., construction. The latter applies to demand being shifted forward due to a more restricted choice set or value of particular activities due to restrictions. Both play a role, and while some sectors have been severely affected (mainly in the service sector), others have expanded even during lockdown (e.g., health care and construction), and some sectors are still severely affected due to travel restrictions. Moreover, evidence indicates that sectors already facing declining employment prospects prior to the pandemic (including some activities prone to automatization) have been most severely hit, and the crisis may thus accelerate ongoing structural changes (Mattana et al. 2000).

There are numerous issues to discuss on the design of the relief packages. There was no experience with such measures, and they were literally designed overnight as economic emergency aid. Although there were some adjustments and refinements later, the original designs have been maintained (political irreversibility). The criteria on which the schemes were based are up for discussion. As an example, the decline in turnover is not unproblematic. Clearly, the crisis caused decline in turnover, but that happens to some firms for various reasons, also under more normal business cycle conditions. While a 30-percent-decline is large, this is also not unusual. Andersen et al. (2021b) report that between 15 percent and 20 percent of firms experienced a decline in turnover of at least 30 percent between 2019 and 2018. Hence, there is a targeting issue, since the scheme provides support both to firms affected by the crisis and to firms which for other reasons would experience a large decline in turnover. Therefore, there are important targeting issues, and obviously the simple criteria used were motivated by having a simple scheme which could be quickly deployed, but this comes at a cost.

Figure 4
Status for Individuals on Wage Compensation, April 2020



Note: The Figure shows status for persons under the wage compensation scheme in April 2020 both before and after entering the scheme. Unemployment is gross unemployment.

Source: Andersen et al. (2021).

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LEARNING POINTS

In retrospect, the macroeconomic logic underlying the relief packages that they support a swift recovery has been vindicated. In that sense they have been successful, although many details on the design can be discussed, but they should be weighed against the urgency of the interventions and the costs of a prolonged downturn.

Clearly, this outcome is not all by design. The pandemic has shown to be very unpredictable with the number and lengths of waves being hard to predict, and further waves cannot be ruled out. A more prolonged lockdown period could thus have resulted in different outcomes. In hindsight, it is probably better to have experienced two relatively short lockdown waves rather than one with the same total overall length. The period between the two waves allowed firms to recover, while a longer lockdown period may have brought more firms to solvency limits. There is both an element of luck and design in the outcome.

The interventions are not far from fine-tuning. When the measures were implemented, the knowledge on their effects was very scant, and far into the re-opening process there were concerns that there was a need for more expansionary policies to support the recovery and worries that the support measures were being phased out too quickly. Moreover, there

was uncertainty about the ability of the private sector to adapt to the new situation, and it is interesting to note that the economic effects of lockdowns during the second wave were significantly smaller than during the first wave, despite lockdowns being rather similar. Finally, many firms have a large debt overhang from the crisis, and it is still uncertain how many are capable of overcoming this problem. The jury is still out on the overall assessment of the economic consequences of the pandemic.

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Anders Åslund

Policy Reactions to the Covid-19 Crisis in Russia and Ukraine



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Russia and Ukraine are suitable comparators in the Covid-19 crisis, sharing a common Soviet past, and similar cultures and religions, while having quite different political systems. Both have unreformed, under-financed, and poorly equipped Soviet health care systems, with little personal protective equipment (PPE), few masks, ventilators, or tests, rendering them vulnerable.¹

To their advantage, they are quite isolated and sparsely populated, facilitating social distancing.

During the pandemic, while the quality of medical care was poor, its structure with many small hospitals, numerous hospital beds, and plenty of physicians was beneficial (Twigg 2020; Cook and Twigg 2020). The Covid-19 pandemic arrived late, offering both countries the opportunity to react early, and they could draw on the Central Europeans' early restrictive policies (Walker and Smith 2020).

In both countries, political power is quite centralized. The government can impose policies from the top, if it so desires. Russia and Ukraine closed their borders early on, limiting the risk of infected visitors, but for the rest their policies differed. The Kremlin tried to conceal the pandemic, while the open Ukrainian government raised an early alarm. The Kremlin refrained from a centralized lockdown, while Ukraine did so quite rigorously.

In neither country has the pandemic inspired reforms. Both countries have pursued ad hoc policies with limited financial or monetary stimulus but no significant structural reforms. Thanks to the dominance of commodities in their economies, they saw comparatively small output declines in 2020, but they appear to be just about catching up in 2021.

HOW THE COVID-19 PANDEMIC HIT RUSSIA AND UKRAINE

The most important Covid-19 measurement is presumably the death rate. As of August 31, 2021, Russia and Ukraine had remarkably similar recorded death rates per 1 million people of 1,260 and 1,240, respectively,

putting them moderately on the 49th and 51st place in the world (Worldometer 2021).

The statistics display remarkable contrasts. The coronavirus hit Russia hard in late April 2020, while Ukraine had insignificant infection rates until September 2020. A second wave struck Russia in mid-September 2020, when the first wave hit Ukraine. Both abated in January 2021. Later on, developments diverged. Ukraine encountered its second and worst wave from February to April 2021, while Russia had only a moderate level of infection. From mid-June 2021, Russia faced its third bad infection period, while Ukraine's infection was minimized.

Apart from in the fourth quarter of 2020, coronavirus infection in Russia and Ukraine was unrelated, as there was minimal traffic between the two countries because of far-reaching war, lockdown, and sanctions. Ukraine moved in parallel with Central Europe, with which it still had significant contacts.

The Russian death rates are confusing. While they have fallen over time in most of the world, Russia records a substantial increase (Worldometer 2021). Russian opposition activists have all along claimed that its Covid-19 statistics have been substantially underestimated, arguing that that its real Covid-19 death rate might be as much as four times higher (Kobak 2021). The Economist (2021) assesses Russia's excess deaths at 650,000–710,000 during the pandemic. In 2020 alone, Russia recorded an increase in deaths by 323,000 compared to 2019, as 2.12 million Russians died in 2020. Russia's population declined by 700,000 in 2020 and its life expectancy fell by 2.2 years (Moscow Times 2021).

RUSSIA AND UKRAINE ADOPTED DIFFERENT POLICIES TOWARDS COVID-19

From the outset, Russia and Ukraine adopted contrasting policies towards Covid-19. With its strong centralized and authoritarian government, Russia could have been expected to take forceful central action, but it did not. Since Ukraine's government is weak, a softer and more decentralized policy appeared probable, but it did the opposite. In both Russia and Ukraine, the Covid-19 strategy was conditioned by government changes in early 2020.

On 15 January 2020, Putin dismissed his subser-vient prime minister, Dmitri Medvedev, and most of his government. The new prime minister was Mikhail Mishustin, a hard-headed technocrat and former head of the tax service. Putin appeared to want a

¹ The three overall sources of this article are Åslund (2020), Cook and Twigg (2020), and Oxenstierna (2021). The standard statistics come from BOFIT (2021) and Dragon Capital (2021), both using the latest official statistics.

more effective government but maintain macro-economic stability (Higgins 2020a).

In early 2020, Putin focused on three topics: more spending on his thirteen national projects to boost Russia's investments and economic growth, a plebiscite on 22 April to amend the Constitution of 1993, and a major Parade to celebrate the Soviet victory in World War II on the Red Square on 9 May. None of these aims was achieved. The pandemic diverted funding, delayed the referendum, and forced Putin to minimize the parade.

On 4 March 2020, Ukrainian President Volodymyr Zelensky sacked his young reformist government to great surprise, which effectively ended reforms. The new government seemed accidental, never presented any program, and the turnover of ministers has been great.

With its preference for secrecy, the Kremlin initially denied the virus and played down its impact. In contrast, Ukraine's free media compelled the Ukrainian authorities to take it seriously. Whereas the Ukrainian cabinet of ministers ran the Covid-19 policy, the Russian president and prime minister passed the buck to the regional governors.

In Russia, the first two cases were registered on 15 February and the first death on 19 March (Worldometer 2021). On 15 March, Russia established a Coordination Committee to fight the pandemic. Putin presented the Covid-19 pandemic as a foreign crisis and sent medical assistance to Italy, Serbia, and the United States. Only on 25 March did Russia begin anti-crisis measures. Uncharacteristically, Putin delegated the pandemic to Russia's 85 regional governors, allowing Moscow Mayor Sergei Sobyanin to take the lead (Foy and Seddon 2020). He made several speeches to the nation, promising paid holidays and social benefits. Russians appreciated their holidays and went to their dachas or the Black Sea, spreading the coronavirus.

Russia carried out one early restrictive measure—closing its borders to foreigners—which was facilitated by Russia's strict visa regulations. On 29 March, Mayor Sobyanin introduced strict lockdown on Moscow City, and other regional governors followed suit. The following week, Russia's parliament adopted a quarantine law. The political agenda switched from infrastructure spending to crisis management (Åslund 2020).

The Russian government's haphazard attitude undermined public confidence. In early March, the independent pollster Levada Center established that only 16 percent of Russian respondents fully trusted the country's official coronavirus data (Khurshudyan 2020). Medical staff protested about major shortages of PPE, leading to their widespread infection. Some set up a website that recorded that more than 1,400 medical officers had died of Covid-19 (Spisok Pamyati 2021). They were upset that Russia exported its scarce PPE to Italy, Serbia, and the United States.

Russian authorities detained the leader of an independent doctors' union, who claimed that the low official numbers for coronavirus infections were incorrect (Higgins 2020b). Ominously, four physicians, who have complained about the lack of PPE, fell out of windows in Russian hospitals in late April and May and at least two died (Miller 2020). Many hospitals became hotbeds of infection as the hygiene was poor. On a positive note, Russia swiftly developed a large testing capacity (Dixon 2020).

The public questioning of the official Covid-19 statistics has led the authorities to swiftly aggravate repression. In 2020-21, the foremost remaining independent media and non-governmental organizations have been labeled "foreign agents," "undesirable," or "extremist," which has limited or prohibited their activities. Most leading opposition activists have been forced to leave Russia (Badanin 2021). After opposition leader Alexei Navalny was poisoned by the FSB, he produced a video about Putin's palace on the Black Sea, which was downloaded by 118 million on YouTube (Navalny 2021). When he returned to Russia in February 2021, he was jailed for no legal reason. The worst repression that Russia has seen since Communism appears to have escalated for the September 19 State Duma election.

On 30 April 2020, Mishustin announced that he had come down with coronavirus, and several federal ministers and other top officials were also infected (Moscow Times 2020). Putin became extremely cautious, isolating himself in his residences in Novoe Ogarevo outside of Moscow, and in Sochi. He held most official meetings by video even with ministers and the Security Council. The few visitors that he received in person had to go through serious testing and two weeks of quarantine (RFE/RL Report 2020). Navalny nicknamed him "grandfather in his bunker." Putin's far-reaching self-isolation must have limited his understanding of what was going on in the country.

In Ukraine, both the government and society were terrified by Covid-19 from the beginning. The first case was detected on 3 March, and the first death occurred on 13 March (Worldometer 2021). The government reacted swiftly and resolutely, introducing quarantine as early as 12 March. On 25 March, the government declared a national emergency situation and reinforced the quarantine.

Ukrainians doubted that their government would be able to protect them and they were painfully aware of the poor state of their obsolete health care system. Therefore, the Ukrainian government opted for highly restrictive policies from the beginning, following the Central European example. President Volodymyr Zelensky set a tone of great concern, advising Ukrainians to stay at home, and he used face masks in public. On 16 March, he invited fifteen of Ukraine's biggest businessmen, asking them to take the lead in one or two of Ukraine's regions in the fight against

the coming pandemic, taking over the regional responsibility from the regional governors (Talent 2020).

Initially, Ukraine's lockdown was fairly extreme. People aged 60 or more were prohibited from going outside. No more than two people were allowed to be out together. Virtually all public transportation was closed down and the borders were sealed to foreigners. Schools and universities shut down. Restaurants, non-essential shops, and all kinds of public venues were closed. Only grocery stores, pharmacies, banks, and gas stations were allowed to stay open (Dragon Capital 2020). From late April, the restrictions eased somewhat because of increasing popular dissatisfaction (Shandra 2020). This softening has continued, and the originally national restrictions have been differentiated by region depending on the severity of the pandemic (Korniienko 2020).

At first, people obeyed, leading to little infection until the fall of 2020. Yet, from the late spring of 2020, people grew tired. Local businessmen protested against having to keep their shops, cafés, and restaurants closed. They received support from some influential mayors (Shandra 2020). Violations of the quarantine by many in the Ukrainian elite, notably parliamentarians going to a few top restaurants that secretly and illegally kept open, aroused public anger. As a result, the quarantine eased in the summer of 2020 and a full lockdown has not been attempted again. The President, the Prime Minister, several ministers, and probably half of the parliamentarians have been infected.

SIMILAR ECONOMIC POLICIES

Curiously, while Russia's and Ukraine's policies to combat the Covid-19 pandemic differed, they pursued quite similar economic policies and achieved similar economic results. They believed in fiscal and monetary stimulus, but they were subject to severe financial constraints.

For Russia, the experiences during the global financial crisis in 2008/9 and the Western sanctions since 2014 set the tone. In 2008, Russia had launched the biggest fiscal stimulus of all G20 countries. Its federal budget had swung from a surplus of 4.1 percent of GDP in 2008 to a deficit of 6.0 percent of GDP in 2009, but even so its GDP slumped by 7.8 percent in 2009 (BOFIT 2021). The Russian lesson was that such a big fiscal stimulus had been ineffective, though the real reason might have been that it favored big state-owned and oligarchic companies (Radygin 2018). Another Kremlin concern was Western sanctions that constrained its international financial resources.

The Kremlin adopted two economic anti-crisis packages, on 25 March and 15 April, respectively, with a mixture of social benefits, increased unemployment benefits, credit subsidies for the people, tax concessions for small and medium-sized enterprises, and

corporate subsidies (Putin 2020a). These two packages were rather timid, comprising only 2.6 percent of GDP, although Russia's federal public debt was only 13 percent of GDP in 2019. The Ministry of Finance planned a minor budget deficit of 4 percent of GDP, which became even smaller at 3.8 percent of GDP, displaying Russia's strong fiscal restraint (BOFIT 2021). Liberal economists called for a much more substantial fiscal stimulus of 6–10 percent of GDP, supporting the population and small firms. Russia's traditionally very low health care expenditures were raised from 3.5 percent of GDP in 2019 to 4.6 percent of GDP in 2020 (Oxenstierna 2021).

The Central Bank of Russia was similarly conservative. It cut its interest rate moderately from 6 percent per annum to a minimum of 4.25 percent per annum after which the interest rates rose (Trading Economics 2021). Russia's large international currency and gold reserves increased to almost \$600 billion in 2020, allowing Russia to maintain a floating exchange rate (BOFIT 2021).

Putin has incessantly emphasized the need for strong public finances and large currency reserves. His real reason is the severe Western financial sanctions on Russia since July 2014, although he belittles them publicly. To maximize his "sovereignty," or freedom of maneuver, Putin wants great financial independence. Thus, the Western sanctions have trapped Putin in a harmful austerity policy that has led to Russia's complete stagnation since 2014 (IMF WEO 2021; Åslund and Snegovaya 2021).

Ukraine pursued a similarly conservative fiscal and monetary policy, but for very different reasons. It was simply short of funding and did not see eye-to-eye with the IMF, which insisted on more anticorruption reforms than the government was willing to implement. Ukraine had exited a severe financial crisis in 2014/15—caused by the illicit financial activity of the prior president Viktor Yanukovich and Russia military aggression—thanks to the IMF and severe austerity. By 2019, the economy stabilized, and it appeared to be set for an economic take-off, but the new regime of President Volodymyr Zelenskyy opted for a policy of minimal reform and elementary macroeconomic stability, showing no interest in higher economic growth.

Ukraine concluded a standby program with the International Monetary Fund (IMF) in June 2020, but it only received a first tranche of \$2.1 billion. Since the Ukrainian government refused to comply with further IMF conditions to combat corruption, the IMF did not disburse further funds. However, Ukraine's currency reserves lingered around \$28 billion in 2020, the highest since 2011, which was sufficient to keep the economy going so that Ukraine could manage without IMF funding; nevertheless, Ukraine had better proceed with caution (Dragon Capital 2021).

In 2020, the Ukrainian government planned a significant fiscal stimulus, increasing the budget deficit

by some 5.5 percent of GDP to 7.5 percent of GDP with the acceptance of the IMF (Sorokin 2020). Health care expenditures were increased, as they were also in Russia. Individual entrepreneurs were exempted from social security contributions and land taxes. Tax inspections were halted. Unemployment benefits were expanded and pensions increased (Dragon Capital 2020). However, the budget deficit stayed smaller than anticipated at 5.7 percent of GDP because of the lack of international financing (Dragon Capital 2021). In August 2021, Ukraine benefited from the IMF issue of \$650 billions of Special Drawing Rights to all members, of which Ukraine obtained its share of \$2.7 billion without having to comply with any conditions, so why bother with the standby conditions?

The National Bank of Ukraine (NBU) cut the interest rate from 10 percent per annum to 8 percent per annum, which did not impact the exchange rate that stabilized. The NBU provided ample re-financing and advised commercial banks to postpone dividends, while allowing the restructuring of performing loans and suspending amortization payments (Dragon Capital 2020).

LIMITED VACCINATION

Both Russia and Ukraine have been slow in the vaccination against Covid-19. As of 31 August 2021, 25 percent of all Russians had been fully vaccinated and just 8.4 percent of all Ukrainians (Holder 2021). Both countries rank low internationally.

The Russian situation is quite peculiar. Russia was the first country in the world to approve a coronavirus vaccine, Sputnik V, for use in August 2020. It was followed by Vektor or “EpiVAcCroana” and “CoviVAc” in February 2021 (Oxenstierna 2021). By August 2021 Russia had four approved vaccines. From January 2021, Russia pursued a mass vaccination campaign of the whole grown-up population with free inoculation, but even so it ranks low (Tóth-Czifra 2021).

The explanations of this relative failure are numerous, but the biggest explanation is that Russians do not trust the authorities. The authorities from Putin down spoke disparagingly about the leading Western vaccines, convincing Russians that the Russian vaccines were not effective. These suspicions were embraced by much of the medical staff. Putin aggravated these suspicions. In late March, he finally claimed that he was vaccinated, but he did so in private and did not tell anybody what vaccine he used, which aggravated distrust.

Early on, Russia promised dozens of countries deliveries of its star vaccine Sputnik V, when the West offered little or nothing. By the summer of 2021, however, goodwill turned to anger, as Russia failed to comply with its supply commitments. Russia did not have the mass production capacity needed to live up to its promises (BBC 2021).

Ukraine has not produced any vaccine of its own. Being at war with Russia, it refused its offer of Sputnik V. Not being a member of the EU or any other community offering vaccines, it had to rely upon vaccines by friendly Western countries. Various Western countries, such as Poland, Germany, and the United States have promised substantial but limited supplies of vaccine, which is the main explanation of why so few Ukrainians have been vaccinated. The infection rate has come down primarily because people have become quite cautious.

MINIMAL IMPACT ON ECONOMIC POLICIES

An outside observer easily presumes that the convulsions of the Covid-19 pandemic was a good reason to launch serious structural reforms to promote growth. Arguably, that has happened in Italy and Spain. The perspectives of the governments in Russia and Ukraine, however, were very different. Neither government cared much about economic growth, while they were greatly concerned about macroeconomic stability and the maintenance of sufficient international currency reserves. Therefore, they pursued conservative fiscal and monetary policies. The Kremlin protected its sovereignty and Ukraine recognized its financial constraints, although it refused to comply with IMF conditionality.

Russia’s economy has stagnated since 2014, and economic growth is no longer an objective. Putin’s main economic themes are macroeconomic balance, development of defense technology, strengthening the security services, expanding agriculture, and pursuing import substitution. The understated constraint is the Western financial and technology sanctions (Putin 2020b). Putin seems preoccupied with maintaining political power, and as his popularity has declined, he has applied more repression (Badanin 2021).

The Ukrainian government had a reform agenda until the government change in March 2020. Now reforms are driven by the international financial institutions, primarily the IMF. The Ukrainian government has carried out some reforms, notably the liberalization of private land sales in July 2021 and the adoption of two important judicial reforms in the summer of 2021. But, in parallel, the government undermined the corporate governance reforms that had been introduced from 2015–18 and the independence of the National Bank of Ukraine. It aggravated the electricity and gas price distortions, which increased cross subsidies and energy payment arrears. The government’s main ambition was infrastructure construction, which was badly needed and popular.

In spite of limited fiscal and monetary stimulus, Russia and Ukraine suffered relatively little decline in their GDP in 2020, 3.0 percent and 4.0 percent, respectively. In July 2021, the Russian Ministry of Economy expected the GDP to grow by 4.8 percent in 2021. Current forecasts for Ukraine’s GDP is that it will grow by

roughly 4 percent in 2021. In spite of comparatively favorable conditions, they are just about coming back to their prior output level.

Both countries benefited from their small service sectors in the downturn. They also benefited from much improved terms of trade, as the global prices for iron ore, metals, and agricultural exports rose sharply. This was reflected in improved current account balances, but not in economic growth. In particular Ukraine gained from improved terms of trade with high prices of its main exports, iron ore and agricultural commodities. While usually having a limited current account deficit, it recorded a current account surplus of 3.3 percent of GDP in 2020 (Dragon Capital 2021). The rising commodity prices also boosted domestic inflation to 6 percent in Russia and 10 percent in Ukraine in July 2021, and both central banks are hiking their interest rates to combat inflation.

In neither country does it appear as if the pandemic has impacted the economic system, since neither government was interested in economic reforms leading to higher economic growth. Both governments are interested in macroeconomic stability because they know that financial crises tend to destabilize the government. Economic growth, strangely, does not appear to be vital for their maintenance of power. Instead, both governments appear focused on maintaining control of law enforcement and the judicial system. That is true of all the twelve former Soviet republics, while the three Baltic states are very different.

The Ukrainian governments have been forced to make certain concession to international donors, but they have not changed the fundamentals of power, and with rising reserves, the Ukrainian government has gained freedom of action, while the Russian government is truly sovereign. Neither government shows any inclination to promote the rule of law to attract more investment and thus boost economic growth. They prefer centralized control. The Covid-19 pandemic increased their tendency to ad hoc policies and has detracted public attention from long-term issues such as structural reform and growth. It remains to be seen whether any public pressure for higher economic growth will arise, but so far it is not apparent. An explanation might be that ambitious people close to power can do very well individually, while the country does not.

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Negative Interest Rate Policies: Taking Stock of the Experience So Far*

Negative interest rates as a policy tool are a recent innovation. The first time a main central bank policy rate entered negative territory was in Denmark in 2012. Since then, the European Central Bank (ECB) and central banks in Japan, Sweden, and Switzerland have also used a negative interest rate policy or NIRP (see Table 1). They did so when the room for easing policy by cutting rates in positive territory had been exhausted, and often in concert with other “unconventional” monetary policy measures.

The global neutral real rate of interest—the level of real rates at which demand equals potential output, therefore eliminating inflationary or deflationary pressures—has been in decline for decades in response to slow-moving structural forces and is currently close to zero in many advanced economies (e.g., see Del Negro et al. 2019). With inflation targets of about 2 percent, a low real rate has resulted in very low nominal rates as well. In a recession, and when policy rates are already low, central banks have turned to NIRP as a means to deliver needed monetary stimulus, usually alongside other unconventional policy measures.

However, this move was met by deep skepticism (and even hostility) by the public and many economists (The Economist 2015). The potential adverse effects of NIRP on bank profitability, financial intermediation, and financial stability were of particular concern. One key fear was that banks may find it hard

ABSTRACT

For almost 10 years, several central banks in advanced economies have cut and maintained their key policy rates below zero. Central banks in Denmark, the euro area, Japan, Sweden, and Switzerland had turned to such policies in response to persistently below-target inflation rates and a very low neutral real interest rate. However, negative rate policies remain controversial, and their potential side effects are subject to much debate. This paper surveys the body of research that has grown out of the experience with the policy to date, and takes stock of the evidence. Overall, the experience with negative rates has broadly been positive. Lending and deposit rates fell following the adoption of NIRP. Bank lending volumes rose, and bank profits for the most part did not significantly deteriorate.

to cut retail deposit rates below zero (Hannoun 2015). The reason is that deposit holders may substitute physical cash for bank deposits once interest rates go below an “effective lower bound” (ELB). This is a particular risk in the case for retail deposits, since insurance and storage costs of small cash holdings are not very large.

While banks’ net interest margins (NIM) may suffer if banks cannot pass on negative rates to their

* This paper draws on Brandao-Marques et al. (2021).



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customers, negative rates may support banks' net worth by boosting asset values and improving loan quality. If NIRP has the intended effect of easing economic conditions, bank provisioning declines along with borrowers' improved balance sheets. For tradeable assets, a similar revaluation may occur, and is reflected in mark-to-market gains. The equity value of the bank is potentially improved through both of these channels. But this benefit is transitory—capital gains are a one-off, and new loans will be priced to reflect better conditions.

When the negative net income effect outweighs the positive net worth effect, cuts in rates may hurt lending. NIRP may then depress bank profits and, with it, banks' ability to raise capital at reasonable cost and to extend credit to the broader economy. The interest rate below which these adverse effects could

seriously impair or even reverse the pass-through of policy rates to lending and deposit rates is the “reversal rate” (Brunnermeier and Koby 2018). However, the reversal rate may lie above, at, or below the effective lower bound and is in fact a different economic concept. It depends on the composition of financial intermediaries' balance sheets and income (Darracq Pariès et al. 2020). Therefore, before discussing the evidence on NIRP's effect on overall bank profitability, we will discuss what we currently know about bank deposit-taking and lending, both in terms of quantities and prices.

DEPOSIT RATES

Banks seem to have responded to NIRP by increasing fees on retail deposits, while passing on negative rates partly to firms. For retail customers, banks overcame the ZLB (zero lower bound) on deposit rates by charging higher fees and commissions on retail depositors (Arce et al. 2018; Bottero et al. 2019 for the euro area; Basten and Mariathan 2019 for Switzerland). In contrast, for corporate customers, negative rates were transmitted to rates on deposits (Altavilla et al. 2019; Deutsche Bundesbank 2020). Moreover, the responsiveness of bank deposit rates to successive policy rate cuts after the introduction



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Table 1
Timeline of NIRP

Country	Instrument	Date	Level
Denmark	Certificates of deposit	6 July 2012	-0.20 percent
		25 January 2013	-0.10 percent
		25 April 2013	0.05 percent
		5 September 2014	-0.05 percent
		20 January 2015	-0.20 percent
		23 January 2015	-0.35 percent
		30 January 2015	-0.50 percent
		6 February 2015	-0.75 percent
		8 January 2016	-0.65 percent
		13 September 2019	-0.75 percent
20 March 2020	-0.60 percent		
Euro area	Deposit rate	11 June 2014	-0.10 percent
		10 September 2014	-0.20 percent
		9 December 2015	-0.30 percent
		16 March 2016	-0.40 percent
		18 September 2019	-0.50 percent
Japan	Deposit rate	16 February 2016	-0.10 percent
Switzerland	Sight deposits	15 January 2015	-0.75 percent
Sweden	Repo rate	18 February 2015	-0.10 percent
		25 March 2015	-0.25 percent
		8 July 2015	-0.35 percent
		17 February 2016	-0.50 percent
		9 January 2019	-0.25 percent
		8 January 2020	0 percent

Source: Compilation of authors.

of NIRP does not seem to have changed significantly (Figure 1).

DEPOSIT VOLUMES

The evidence on the effects of NIRP on the quantity of deposits is less clear. This is because, except for some experimental evidence (Baars et al. 2020; Bracha 2020; Corneille et al. 2020; Efendic et al. 2019), empirical studies of the response of household savings and portfolio choices to NIRP are largely absent. Therefore, we can only empirically test the effects of NIRP on bank liabilities by observing bank behavior, which is usually obscured by several confounding factors. For example, the evolution of deposits may reflect the adoption of unconventional monetary policy measures, such as quantitative easing.¹ Still, the available descriptive evidence on aggregate cash ratios suggests that neither households nor non-financial firms have significantly rebalanced their portfolios away from bank deposits (Brandao-Marques et al. 2021).

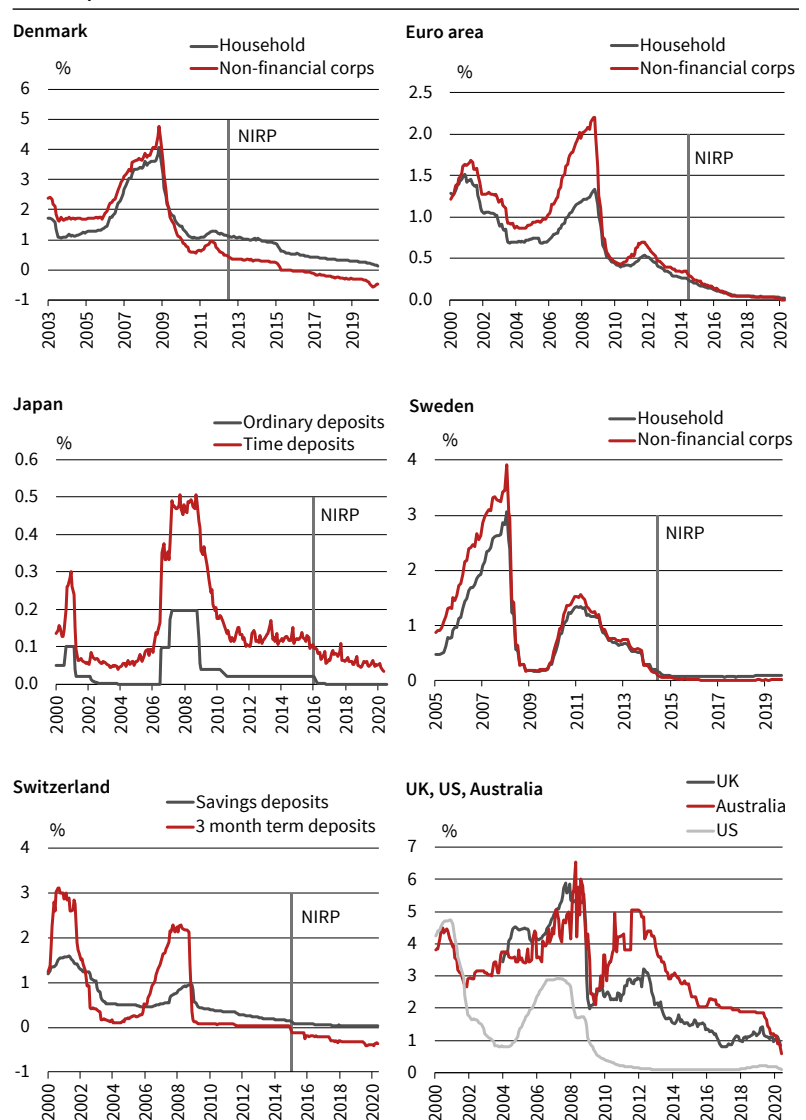
LENDING RATES

NIRP seems to have lowered interest rates on new mortgages and corporate loans, but there is substantial heterogeneity across banks. Bottero et al. (2019) report that Italian banks lowered loan rates and increased lending in response to NIRP—particularly those banks holding larger shares of liquid assets. Similar results have been obtained for Switzerland by Basten and Mariathasan (2018). In Denmark, lending rates fell after NIRP was introduced but there is no evidence that banks theoretically more exposed to NIRP (i.e., with a higher reliance on deposit funding) responded differently than other banks (Adolfson and Spange 2020). In contrast, Italian banks with a relatively high reliance on retail deposits tended to increase rates on loans to the nonfinancial private sector (Amzallag et al. 2019), while Japanese banks that were more exposed to NIRP did not lower lending rates as much as other banks (Hong and Kandrac 2018). According to the findings by Baeriswyl et al. (2021), Swiss banks tried to compensate for stickiness of deposit rates by raising lending rates when short-term market rates entered negative territory.

LOAN VOLUMES AND RISK-TAKING

Other mechanisms may lead banks to lend more or make riskier loans in response to shrinking profitability and low policy rates. On the one hand, when banks have significant market power (the key ingredient for a “deposits channel of monetary policy”), they may respond to lower intermediation margins caused by a policy rate cut by lending more (Drechsler et al. 2017

Figure 1
Bank Deposit Rates before and after NIRP



Source: Danmarks Nationalbank; European Central Bank; Bank of Japan; Sveriges Riksbank; Swiss National Bank; Haver Analytics.

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and 2021). On the other hand, banks may increase risk-taking and lend to riskier borrowers if NIRP reduces banks' net worth (Dell'Ariccia et al. 2014).

According to some studies, banks with more liquid assets and greater access to wholesale funding are able to increase lending more after NIRP. Studies that use different cross-sectional characteristics to measure the exposure to NIRP find a stronger increase in lending by banks with a larger share of liquid assets (Bottero et al. 2019) and more excess reserves with the central bank (Basten and Mariathasan 2019). Moreover, banks with a lower share of deposit funding increase their supply of credit more (Heider et al. 2019; Lopez et al. 2020) or as much as (Bottero et al. 2019) other banks.² In addition, Inoue et al. (2019) and Eggertsson et al. (2019) have found that in Japan and

¹ When the central bank purchases assets directly from households or firms, this mechanically increases bank deposits held by these sectors.

² The only study that ranks banks in terms of retail deposits and excess liquidity simultaneously also finds a positive impact of NIRP on lending (Demiralp et al. 2019).

Table 2

Estimated Effects of NIRP on Bank Profitability

Paper	Coverage	Effect on measures of bank profitability
Altavilla, Boucinha and Peydro (2018)	Euro area	Increase in bank equity prices in response to unexpected cuts in negative territory identified using high-frequency event studies
Ampudia and van den Heuvel (2019)	Euro area	Decrease in bank equity prices in response to unexpected cuts in negative territory identified using high-frequency event studies
Bats, Giuliadori and Houben (2020)	Euro area	Decrease in bank equity prices in response to unexpected cuts in negative territory identified using high-frequency event studies
Coleman and Stebunovs (2019)	Europe	Decrease in net interest income when rates are negative (dummy variable)
Hong and Kandrac (2018)	Japan	No change in net interest income, earnings per share, and net total income; decrease in bank equity prices identified using high-frequency event studies
Klein (2020)	Euro area	Decrease in net interest income when rates are negative (dummy variable)
Lopez, Rose and Spiegel (2019)	European Union, Japan, Switzerland	No change in net income, decrease in net interest income, increase in noninterest income for banks with a higher share of retail deposits when rates are negative
Molyneux, Reghezza and Xie (2019)	33 OECD countries	Decrease in net interest income and ROA when rates are negative (dummy variable)
Stráský and Hwang (2019)	Euro area	Decrease in net interest income, no change in ROA when rates are negative (dummy variable)
Urbschat (2019)	Germany	Decrease in net interest income, no change in net income from commissions, increase in net income from the valuation of assets, and provisions for banks with a higher share of deposits

Source: Compilation of authors.

Sweden, respectively, a larger share of retail deposits is associated with lower lending.³ The finding that banks that rely more on wholesale funding increase lending more than those that depend more on deposits is in line with the bank lending channel.

Some other studies, however, find that banks that rely more on deposits increase their lending as much, and often more so, than their peers with deposit funding shares. For example, Tan (2019), and Schelling and Towbin (2020) have found that banks increase lending, but the effect is stronger for banks with high deposit ratios and for those that rely more on retail deposits. One explanation for this finding is that banks try to compensate for the decline in interest income by increasing lending volumes (Klein 2020), which would be consistent with Drechsler et al. (2017) on deposits channel of monetary policy.

Banks seem to have taken on more ex-ante risk following the adoption of NIRP (Brown 2015). This result holds in particular for loans (Basten and Mariathan 2019; Bottero et al. 2019; Heider et al. 2019), with some evidence pointing to banks terming out

loans (IMF 2020), but also for securities (Bubeck et al. 2020). Furthermore, smaller banks that are more reliant on deposits for funding seem to become riskier (Nucera et al. 2017, Heider et al. 2019; Schelling and Towbin 2020), as do those banks with lower capital ratios (Inoue et al. 2019) or with stocks that have experienced larger drops in prices following the adoption of NIRP (Hong and Kandrac 2018). These findings are consistent with Dell’Ariccia et al. (2014) on risk-taking channel of monetary policy. In contrast, Arce et al. (2020) found the opposite for euro banks in general and Spanish banks in particular: banks with net interest income more adversely affected by NIRP reduce risk-taking in lending to shore up their capital.

However, the overall observed increase in ex-ante risk-taking did not translate into higher nonperforming loans (ex-post risk). This is consistent with additional lending to financially constrained firms which lack access to credit but are otherwise profitable (Bottero et al. 2019), but it can also be consistent with NIRP improving the ex-post creditworthiness of borrowers, or simply with nonperforming loans being a lagged indicator of credit quality.

OVERALL PROFITABILITY

Several studies have used bank heterogeneity to identify the effects of NIRP on banks’ net interest income and profitability (Table 2). On average, the evidence suggests that bank profits have not significantly deteriorated, thanks to an increase in lending, the introduction of fees on deposit accounts, and the realization of capital gains. For banks in the EU, Japan, and Switzerland, NIRP only had a small overall effect on

³ Eggertsson et al. (2019) describe a theoretical model of the transmission of monetary policy through the banking system. In their model, banks may respond to negative policy rates by raising the spread between their lending and borrowing rates. The wider spread tends to depress output and inflation, rather than stimulating them as intended. However, this result rests on assumptions that (a) there is one type of liability (deposits) subject to the effective lower bound, (b) the marginal benefit to holding reserves in terms of reduced intermediation costs can be driven to zero, (c) the marginal cost of issuing loans rises as bank profits fall, and (d) the central bank attempts to set a policy rate below the effective lower bound. The consequence is that when the central bank sets rates below -0.01 percent (the assumed effective lower bound), it causes bank profits to be lower, and so leads to a contraction in loan supply. See also Ulate (2021) for a similar exercise that reaches very different conclusions.

profitability because losses in interest income were offset by gains in non-interest income, such as fees, capital gains, and insurance income (Lopez et al. 2020), or because of lower loan-loss provisions (see Urbschat 2019 for evidence on German banks).

In relative terms, the income of large, less specialized banks and those that rely relatively less on deposits performs better under NIRP (Molyneux et al. 2019). Larger banks were also likely to have made use of hedging strategies to protect margins (IMF 2020). Other studies find that overall bank profitability in the euro area has been largely unaffected by the introduction of NIRP once the total effects of this policy on asset quality are taken into account (Hong and Kandrac 2018, Altavilla et al. 2019; Stráský and Hwang 2019).

However, the evidence that the average effect of NIRP on bank profits has been small is not conclusive as it may be capturing only short-term effects, which may be reversed over time. In fact, for positive interest rates, evidence shows that rate cuts initially increase bank net interest margins and profits, but after some time the effect is reversed, consistent with loan pricing frictions (Alessandri and Nelson 2015; English et al. 2018). In fact, the expectation of large adverse medium- to long-run effects on bank profitability, potentially offsetting any temporary increase in profits, could explain why bank stock prices fell after NIRP (Ampudia and van den Heuvel 2018; Heider et al. 2019; Balloch and Koby 2020; Bats et al. 2020).

CONCLUSIONS

In sum, although economists and policymakers have identified a number of potential drawbacks of NIRP, none of them have emerged with such an intensity as to justify removing this instrument from the central bank toolbox. This is because the transmission mechanism of monetary policy does not appear to change significantly when official rates become negative. Moreover, overall, bank profitability has not significantly suffered so far, making the reversal rate remain a theoretical concept which has not been empirically validated and, most likely, not yet breached (Arce et al. 2020).

However, there are still many aspects of NIRP that we do not understand yet. First, the evidence on the effects on macroeconomic variables is quite scarce, even though central banks moved rates into negative territory in order to sustain economy growth and inflation. Second, the role of bank competition in shaping outcomes remains obscure. Absent competition from other intermediaries or capital markets, the transmission of negative policy rates to bank lending rates will be weaker, as banks would try and preserve their intermediation margin (IMF 2017). To the best of our knowledge, only one study has tested this hypothesis (Molyneux et al. 2020), despite the availability of relevant data. Third, the mechanisms behind Altavilla et al. (2019) corporate channel are mostly

unknown. According to this channel, cash-rich firms with relationships with banks that charge negative rates on deposits are more likely to use their liquidity to increase investment. However, the specific mechanisms at work remain to be investigated. Finally, the literature so far has largely overlooked the impact of negative interest rates on financial intermediaries other than banks. Given the growing importance of these institutions, the absence of empirical evidence on NIRP on their behavior is surprising.

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Katharina Werner and Ludger Woessmann

Will the Covid-19 Pandemic Leave a Lasting Legacy in Children's Skill Development?*

It is a somewhat ironic observation that despite the fact that children were least affected by the coronavirus in terms of their physical health, it is becoming increasingly clear that the Covid-19 pandemic hit children and families particularly hard. With schools closed for several months and education systems facing unprecedented challenges around the world, children had to learn from home in modes ranging from self-study on provided worksheets to online schooling by video calls. Because of the isolation enforced by social-distancing rules, children could not meet friends or attend youth group meetings. Still, in designing policies to contain the pandemic, countries gave very different priorities to education and to the situation of children. In fact, the duration of school closures was not related to the intensity of Covid-19 transmission across countries (OECD 2021). In this policy brief, we summarize our review (provided in detail in Werner and Woessmann 2021) of what is known so far about how the Covid-19 pandemic affected the education and skill development of school children and about the long-run consequences due to missing skills required for successful participation in the future labor market.

The available evidence suggests that the cognitive and socio-emotional development of many children has been seriously impeded by the Covid-19 school closures and other lockdown measures. If remediation fails, these skill losses can be expected to have long-term repercussions, suggesting that there will be a strong persistent legacy of Covid-19 in children's skill development.

Substantial losses have been documented in the development of children's cognitive skills. These are highly unequal, however: children from low-SES families and children with low initial achievement are likely to be hit much more severely on average than their more advantaged counterparts, exacerbating future educational and economic inequality.

The Covid-19 restrictions also clearly interfered with the socio-emotional development of many children. Still, if children in general prove as resilient to the Covid-19 situation as to previous crises, serious

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ABSTRACT

For school children, the Covid-19 pandemic brought school closures that challenged their learning experiences and social-distancing rules that impeded their peer interactions. Will these experiences have persistent effects on the development of children's cognitive and socio-emotional skills? We summarize the available evidence on how the pandemic affected the educational inputs provided by children, parents, and schools, how it impacted children's cognitive and socio-emotional development, and what this means for later economic outcomes. There is clear evidence that the Covid-19 pandemic seriously impeded the cognitive and socio-emotional development of many children. If remediation fails, these skill losses are likely to reduce skill development, lifetime income, and economic growth and increase educational and economic inequality in the long run.

medium- to long-term damage to their psychological development may be restricted to a smaller subgroup of children. With respect to the negative effects of limited social interactions, it remains to be seen whether certain phases turn out to be sensitive for the long-run development of social skills in broader parts of the affected cohorts.

WHAT DO COVID-19 SCHOOL CLOSURES MEAN FOR CHILDREN?

School closures can affect student outcomes in many dimensions and through a plethora of channels. To organize our thinking about what legacy Covid-19 may leave in children's education, we suggest a so-called education production function (e.g., Hanushek 2020) as a conceptual framework. Modeling the process of skill formation, the framework depicts the development of children's cognitive and socio-emotional skills as a function of the inputs by schools, families, and students.

In this framework, school closures can be thought of as a reduction in school inputs. A defining feature of school closures is that there is no teacher in the room to help students with their learning. In the absence of trained educators, students are missing out on key support, and their learning is left more to the

discretion of themselves and their families. Self-regulated learning will be more effective for higher-ability students and for students with better support at home, so that the famous function of schools as the “great equalizer” will be impeded.



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With learning moved to the home, family inputs become much more important during the pandemic, including parents’ time, effort, encouragement, and cognitive and pedagogical skills, as well as families’ disposable income and home environment more generally. The extent to which families compensate for reduced school inputs likely depends on their socio-economic background. High-SES parents may have lower budget constraints, so that they may increase their family inputs more strongly. Their child’s education may enter the utility function of high-SES parents more strongly, so that they may make sure that their child spends more time learning. And their own higher education may make high-SES par-

ents better substitute teachers on average, so that they may be in a better position—either financially or in terms of managing the curricular content—to support their child’s learning activities.

A crucial feature of the educational production process is that students themselves are a key input factor. Without students’ effort and engagement in learning, there will be no skill development. Behavioral responses of the children will therefore be an important mediator of how the school closures affect the development of their cognitive and socio-emotional skills. Because high-achieving students have a better skill base for self-regulated learning, the rate at which they achieve larger learning gains than low-achieving students will likely be faster in home schooling than in classroom teaching. As a consequence, school closures will widen educational inequality along the dimension of individual students’ prior achievement (Grewenig et al. 2021).

Whether short-term impediments to children’s skill development will translate into long-term skill losses will partly depend on whether there are sensitive periods in which certain skills are much easier to learn than at later stages (e.g., Cunha and Heckman 2007). If so, postponement of skill acquisition during school closures—e.g., missing out on developing basic reading, writing, and counting skills in the first years of primary schools or on social interactions during teenage years—may well have long-run repercussions

even if remedial measures are taken once schooling returns in person.

Overall, consideration of different inputs and outputs in the framework of an education production function suggests that many dimensions of child outcomes are likely to be affected by the Covid-19 pandemic, including cognitive skills, socio-emotional skills, and longer-run outcomes. Given the dynamic complementarities of learning (e.g., Cunha and Heckman 2007), the education crisis caused by the school closures threatens to leave a long-term legacy, with important heterogeneities expected for children with different family backgrounds and ability levels.

CHILD, PARENT, AND SCHOOL INPUTS DURING THE SCHOOL CLOSURES

Based on the conceptual framework of the education production function, the next three sections cover the available empirical evidence on effects of the pandemic (1) on the educational inputs provided by children, parents, and schools; (2) on the development of children’s cognitive skills; and (3) on the development of children’s socio-emotional skills.

A first approach to gain a better understanding of how students fared during the pandemic is to look at time-use surveys that show how much time children spent on school-related and other activities during and before the pandemic. We draw on two parental surveys that we fielded to cover the two phases of nation-wide school closures in Germany. After having implemented a first survey of over 1,000 parents during the first phase of school closures in spring 2020 (Grewenig et al. 2021), we fielded a second survey of over 2,000 parents during the school closures at the beginning of 2021 (see Werner and Woessmann 2021 for details). A longitudinal component allows us to track the situation of over 500 school children over time at the individual level, providing new evidence on how schools and families adapted to the pandemic situation over time.

During the school closures in spring 2020, school children spent an average of 3.7 hours on school-related activities—a dramatic decrease from an average of 7.5 hours per day before the school closures (see Figure 1). That is, the average learning time of children was cut roughly in half during the first school closures. During the second nation-wide school closures in early 2021, the time children spent on school-related activities increased slightly to 4.6 hours. This is close to one hour more than during the initial school closures in spring 2020, but still three hours less than during a typical school day before the Covid-19 pandemic.

Before the school closures, there was no noticeable difference in the time that low- and high-achieving students spent attending or learning for school. But during the first wave of school closures, low-achieving children spent a significant 0.5 hours per day less on school-related activities than high-achieving children

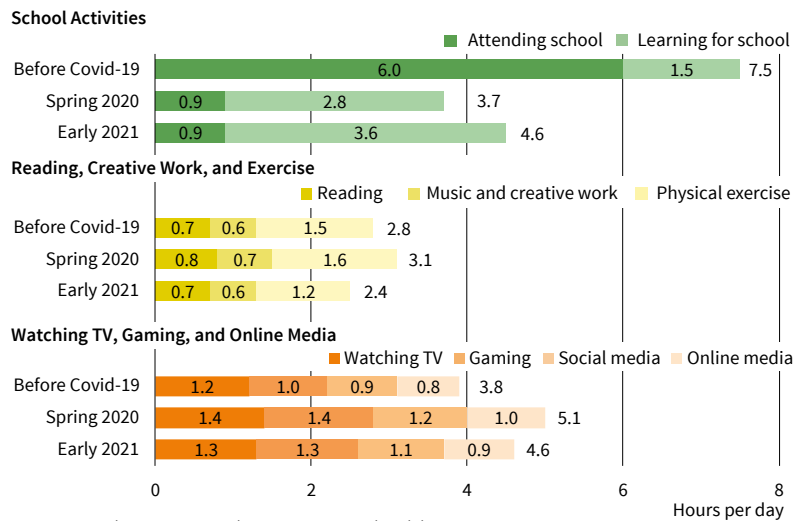
(Grewenig et al. 2021). The pattern is less clear during the second wave.

However, evidence from the second wave suggests that the quality of learning time differed significantly between low- and high-achieving students. Fifty-six percent of parents think that their child learns less per hour of studying at home than during regular instruction at school (see Figure 2). Such a difference in the effectiveness of learning per hour would imply that the reduction in learning time indicated above underestimates the reduction in acquired skills for most students. Interestingly, there is also a minority of 22 percent of parents who think that their child learns more per hour at home than in school, suggesting ample heterogeneity across students in their effectiveness of learning at home. Importantly, the share of parents reporting that their child learns less per hour at home than in school is 12 percentage points higher for low- than for high-achieving students, as well as for children of non-academic compared to academic parents. These results indicate that the same time investment may translate into lower skill growth for disadvantaged students.

The impact of school closures on children’s skill development also depends on which other activities children substituted to instead of learning for school. The average hours that children engaged in activities which most parents consider productive—reading, being creative, and exercising—increased only slightly during the first phase of school closures in spring 2020. In contrast, the average time children spent on activities which most parents consider rather detrimental—watching TV, playing computer games, and spending time on social media and online media—increased markedly during the school closures. While it was 3.8 hours per day before the school closures, it increased to 5.1 hours each day during the first period of school closures. Results from the second survey wave show that a large part of the increase in time spent on detrimental activities persisted throughout the course of the pandemic. This shift towards more detrimental activities was particularly pronounced for low-achieving students.

When school closures reduced teachers’ everyday delivery of education, the role of parents became ever more important. On average, parents report that they spent 1.2 hours per day on school-related activities with their children in both waves of the survey. Compared to the average of 0.5 hours prior to the school closures, parents more than doubled their time investment to support their children’s distance-learning activities. However, parents of low-achieving students spent less time with their child learning for school than parents of high-achieving students, indicating that parental time investments did not compensate for differences between low- and high-achieving students. Substantial inequalities in the learning environment at home—whether children have their own room to study in, a reliable internet connection, or

Figure 1
Time Use of Students before and during the Two Phases of School Closures in Germany

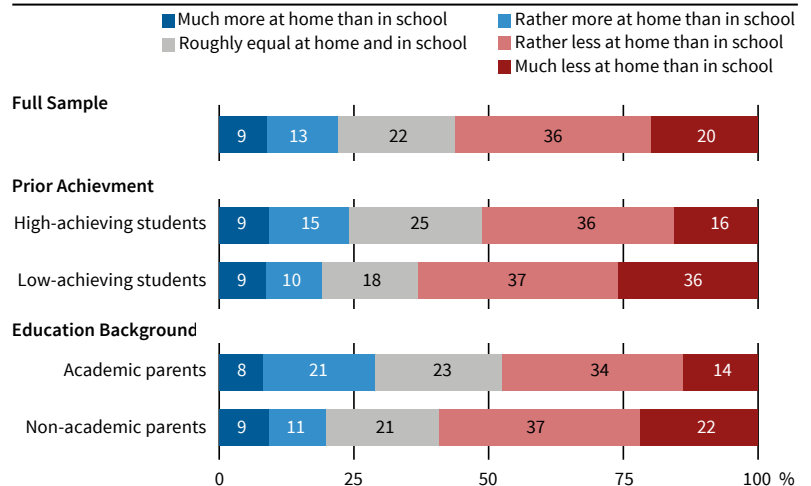


Notes: Average hours spent in each activity on a typical workday.
Source: Werner and Woessmann (2021). © ifo Institute

a computer at home—may further contribute to inequalities in learning opportunities (Werner and Woessmann 2021).

Schools also differed widely in the intensity and type of distance-teaching activities provided to students. In our German survey, only 7 percent of parents report that their child’s school offered daily lessons for the entire class, e.g., by video calls, during the first period of school closures (see Figure 3). Individual conversations between children and teachers were at an equally low level. Instead, the main activity of schools was to provide students with assignments for self-processing: more than 90 percent of parents report that their child received assignments for at-home study several times a week. Yet, only a subset of 64 percent of parents report that their child received feedback on their completed assignments at least once a week.

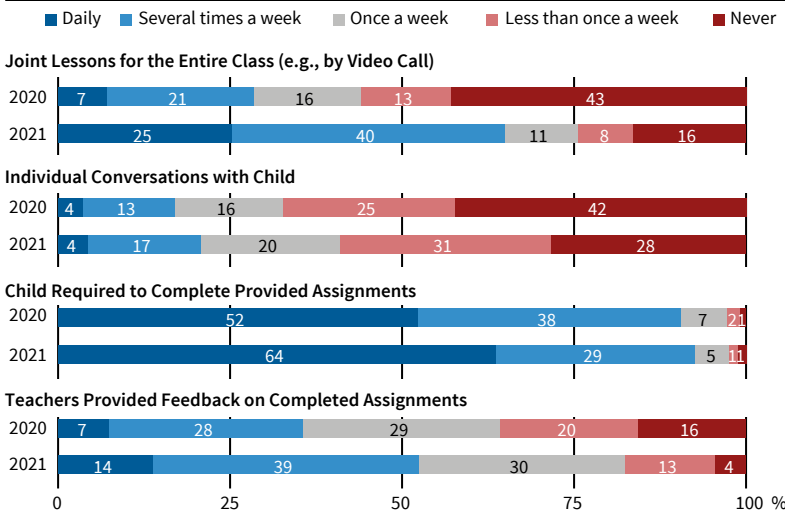
Figure 2
Parental Assessment of Effectiveness of Children’s Learning Time at Home vs. in School



Notes: Parental response to the question, “How much do you think your child learns during one hour of learning at home compared to one hour of regular instruction at school? Per hour, child learns...”.
Source: Werner and Woessmann (2021). © ifo Institute

Figure 3

Activities of Schools during the Two Phases of School Closures in Germany



Notes: Parental response to the question, “Which activities did your child’s teachers or school engage in during the multi-week period of school closures?”. Source: Werner and Woessmann (2021). © ifo Institute

The intensity of online teaching increased markedly in the second wave. For early 2021, 25 percent of parents report that their child’s school held daily online lessons, a substantial increase over the 2020 level. At the same time, even in the second year of the pandemic 35 percent of parents report that their child had online lessons at most once a week. In both survey waves, parents without academic education and parents of low-achieving children report less school engagements, suggesting that teachers were not able to differentially support children who were faced with potentially more challenging distance-learning circumstances.

Combining the information on students’ learning time and schools’ activities from the two survey waves, we find that learning time increased strongly when online class instruction was provided on a daily basis, but not at lower frequencies of online instruction or with any of the other school activities. The estimated value-added models exploit the panel dimension of our data to look at the *change* in learning time from the first to the second wave (see Werner and Woessmann 2021 for details). The results indicate that learning time during the second school closures increased by over one hour more for students whose school had implemented daily online teaching by that time compared to students whose school had not.

The pattern of differential pandemic effects on the learning opportunities of children from different backgrounds replicates in several studies in a variety of contexts, including time-use surveys in the United Kingdom and the United States (e.g., Andrew et al. 2020; Bansak and Starr 2021). Prior patterns of family life were often disrupted during the lockdowns, with altered work patterns, chore allocations, and household tensions among parents (e.g., Biroli et al. 2021). Increasing evidence suggests that the burden of additional childcare responsibilities fell disproportion-

ately on mothers, with potential detrimental effects on their labor-market attachment and wellbeing (e.g., Zamorro and Prados 2021). Where school resources are lacking, evidence shows that many parents look for alternative ways to improve their child’s access to education, such as online courses (Bacher-Hicks et al. 2021) or private schooling (Dee et al. 2021). Ample survey evidence from many countries thus indicates that learning inputs provided by schools, parents, and the children themselves all tended change due to the Covid-19 school closures in a way that particularly challenged students from disadvantaged backgrounds, aggravating patterns of educational inequality.

CHILDREN’S COGNITIVE DEVELOPMENT

An increasing number of studies look at how the school closures may have affected the development of children’s cognitive skills, in particular their performance on achievement tests in academic subjects taught in school. While many tests were discontinued during and after the pandemic, some studies have access to data on students’ performance on standardized tests.

We highlight two main methodological problems that complicate deriving the impact of the school closures from the testing data that are available. First, in most data it is difficult to disentangle any Covid-19 effect from usual cohort effects. As the school closures affected virtually all students, there is no convincing contemporaneous control group in cross-sectional data that could directly inform about the achievement in the absence of the closures. Most available studies therefore compare achievement of the affected cohort on a test after the closures to the achievement of previous cohorts who had taken the test in previous years. The problem is that the cohorts may have performed differently even without the school closures, a feature that is widely documented by countries’ changing performance on international achievement tests. Such cohort effects would introduce bias into an interpretation of differences in average achievement across cohorts as effects of the Covid-19 school closures.

To address bias from cohort effects, one needs individual-level longitudinal data that allows observing how the students tested after the school closures had performed on tests before the school closures (compared to earlier cohorts). To our knowledge, only one study has access to this type of data in the Netherlands, where national tests in primary school take place twice a year, including in 2020 (Engzell et al. 2021). The study estimates the effect of the Covid-19 school closures as the difference in learning gains from January/February to June between the 2020 cohort affected by the closures and the three previous cohorts (2017–2019) for whom this period of learning was not disrupted by school closures. The study finds

an average learning loss equivalent to the average student learning of one-fifth of a school year, which is similar to the entire length of the school closures—implying that students made hardly any progress on average when learning at home. Losses are substantially larger for children from low-educated parents. Notably, the Dutch case is likely a best-case scenario with comparatively short school closures, equitable school funding, and world-leading broadband penetration.

The second, probably even more important problem is that substantial fractions of students did not participate in the testing during or after the closures. It seems likely that those students who are hardest hit by the pandemic, who discontinued learning the most during the closures, or who may not even have returned to school yet are most likely not to participate. If non-participation is concentrated at the bottom of the achievement distribution, it introduces substantial upward bias in repeated cross-sectional data—i.e., any loss in skills will be underestimated due to non-participation. To get an idea of the size of the bias, note that if one drops the lowest-achieving 10 percent of students from a population, the mean achievement will increase by the equivalent of 60–80 percent of an average school year of learning—and 120–160 percent if 25 percent are dropped. The approach of the Dutch study addresses this concern and provides additional evidence suggesting that it successfully removes the bias.

The problems of cohort effects and non-participation bias caution against far-reaching interpretations of results on achievement tests since the Covid-19 school closures presented in a series of additional studies in several countries, including England, Baden-Württemberg and Hamburg (Germany), Ohio and specific other US school districts, Switzerland, and New South Wales (Australia). A study in Flemish Belgium that is likely to still underestimate the learning losses because of these biases finds learning losses more than twice as large as the Dutch study (Maldonado and de Witte 2021).

Beyond the evidence for the initial closures of Dutch primary schools, our knowledge about the size of the loss in academic achievement due to the Covid-19 school closures is thus very limited. Still, recent reviews have concluded that overall, the available studies suggest that there are large negative effects of the school closures on student achievement (Hammerstein et al. 2021; Zierer 2021). Furthermore, bias from selective non-participation is likely to underestimate the true learning losses in many of these studies. In general, children from disadvantaged family backgrounds seem to be less successful in acquiring the appropriate skills during the period of school closures.

Only time will tell how the initial losses in academic achievement will translate into long-run losses in human capital. First, there is no evidence yet on effects of the continuing school closures. The initial

losses cannot be extrapolated linearly to the substantially longer closure experiences seen in most countries over the course of the pandemic. Second, it is unclear to what extent there will be persistence or fade-out of the short-run losses in the longer term as children move through other grades and graduate. However, prior evidence suggests substantial persistence of lost skills in adulthood outcomes.

The school closures are also likely to affect children's cognitive development beyond the curricular subjects. Given the experiences that students have had during home learning and online schooling, two specific aspects on which there may in fact be positive effects are their digital skills and their skills to engage in self-regulated learning. In our German survey, 66 percent of parents state that through the school closures, their child has learned to better handle digital technologies, e.g., computers, tablets, and the internet (Werner and Woessmann 2021). Fifty-six percent of parents report that through the school closures, their child has learned to independently acquire course material. But 35 percent disagree with this statement, indicating that there is substantial heterogeneity in the extent to which students have gained self-regulated learning skills during the school closures. Low-achieving students and children of non-academic parents are substantially less likely to have gained digital and self-regulated learning skills on this measure, likely exacerbating differences in learning trajectories in the future.

CHILDREN'S SOCIO-EMOTIONAL DEVELOPMENT

It is a major concern that the forced isolation of households may have had substantial detrimental effects on the socio-emotional development of children. In our German survey, 36 percent of parents in spring 2020 and 48 percent in early 2021 report that the situation during the school closures was a great psychological burden for their child (Werner and Woessmann 2021). Seventy-six percent of parents state that it was a great burden for their child not to be able to meet friends as usual during the pandemic, and 55 percent report that the school closures have harmed their child's social skills. The situation was thus clearly a huge psychological burden for many children, and most children suffered from the reduction in social interactions with peers.

Still, results from a richer measurement of children's socio-emotional wellbeing (SDQ items) in the 2021 survey provide a more mixed pattern of the impact of the school closures. Most parents report no change in most dimensions of their child's socio-emotional wellbeing during the school closures, and some even report improvements. The majority of children may thus in the end prove quite resilient to the situation. But there is substantial heterogeneity, and some children show clear negative developments in their socio-emotional wellbeing.

Two specific features stand out. First, many parents note a deterioration in their child's ability to concentrate. Second, as a positive development, there is evidence of reduced bullying, indicating that the move of the learning environment from schools to homes may in fact have been beneficial for the socio-emotional wellbeing of those students who are often bullied.

Several studies from different countries attempt to quantify the effects of the pandemic on the mental health, psychological wellbeing, and behavioral issues of children. They mostly have to rely on self- or parent-reported data in samples focused on narrow population subgroups. Results consistently point toward higher rates of anxiety, depression, and stress among adolescents due to the pandemic (Jones et al. 2021; Meherali et al. 2021). A representative longitudinal German study has found that children scored substantially lower on mental health and wellbeing in spring 2020 than cohorts surveyed before the pandemic and that the situation deteriorated further in early 2021 (Ravens-Sieberer et al. 2021). Students from disadvantaged backgrounds are consistently found to be more at risk of experiencing socio-emotional issues. There is some indication that worse mental health outcomes may be related to the time that students spend on passive screen activities (Champeaux et al. 2020) and on social media (Biroli et al. 2021).

The key question is to what extent children will be able to recover from the socio-emotional implications of the lockdowns in the medium to long term. Studies that track student outcomes over time report some improvement in socio-emotional wellbeing when restrictions are lifted (Blanden et al. 2021; Meherali et al. 2021). But if there were sensitive periods for socio-emotional development, children exposed to a negative shock during such periods might experience a persistent shift in their mental health. Evidence from past disasters shows that in many cases, most youths exposed to negative shocks are able to recover well within a number of years (Bonanno et al. 2010). It thus remains to be seen to what degree transient experiences of worse mental wellbeing will persist into long-term behavioral issues.

STRUCTURAL MODELS OF SCHOOL AND FAMILY EFFECTS

To study the potential longer-term implications of the school closures, a first approach is to use so-called structural models. These theoretical models of the production of human capital, calibrated to match relevant parameters in real-world data (usually of the US economy), help to further our understanding of the various mechanisms and behavioral responses that may give rise to the overall effects of school closures. The available models depict the behavior of schools and families (although not of the children themselves). One study models the change to online

education, changed peers, and parental responses as channels of how school closures affect adolescents' skill formation (Agostinelli et al. 2021). Another study models the extent to which the reduced public investment is mitigated by increased parental investment of money and time to depict effects on educational attainment, lifetime earnings, and welfare in the long run (Fuchs-Schündeln et al. 2021). A third study uses a similar approach to analyze effects on long-term macroeconomic output and intergenerational mobility (Jang and Yum 2020). The three studies have in common that the temporary school closures have important persistent effects and that they will increase educational inequality.

PROJECTIONS OF ECONOMIC OUTCOMES

A second approach to conjecture the long-run legacy of the pandemic is to use estimates of the economic returns to skills to project how the observed skill losses may affect future economic outcomes. Measures of cognitive skills have been shown to be strong predictors of individual income (Hanushek et al. 2015) and macroeconomic growth (Hanushek and Woessmann 2015). The projections suggest that students who lose the equivalent of one-third of a school year's learning would on average suffer a 2.6 percent loss in income over their working life (Hanushek and Woessmann 2020; see also Psacharopoulos et al. 2021). Larger skill losses would mean equivalently larger earnings losses. For the economy as a whole, the reduced growth from a learning loss of one-third of a school year for the current student cohort is projected to reduce GDP by 1.5 percent on average over the remaining century. While the growth reductions will only emerge in the long term, both the individual and aggregate projected economic losses due to the school closures can clearly be large unless the learning losses are effectively remediated.

POLICY CONCLUSIONS

The long-term legacy of the Covid-19 school closures will partly depend on the policy responses that countries take in the coming years, determining whether students will or will not be able to recoup some of the lost learning. Given the unequal pandemic experience of different groups of children, the chosen measures should particularly focus on the identified at-risk students. Part of the measures should be directed at equipping children with self-regulated learning skills that would allow them to better get through any phases of school closures that may occur in the future. Even if possibly limited in size, the group of students whose psychological development is severely impacted requires particular help.

Most likely, there is no silver bullet that can solve all problems at once, particularly when addressing the needs of disadvantaged students. Therefore, gov-

ernments should use strategies that combine various interventions and approaches to help make up for the lost development of children in the various dimensions. While some of the policy options clearly require additional funding, it seems likely that the costs of most policy measures that effectively mitigate the educational legacy of Covid-19 are easily outweighed by their long-term economic gains.

In the short term, a key lesson is that school closures should be avoided whenever possible. Closing schools should be the last measure of resort after others—which may put greater burden on adults—have been exhausted. If closures are unavoidable, it should be mandatory that schools implement universal daily online lessons with video interaction between teachers and students. As indicated by the results of our value-added model (Werner and Woessmann 2021), daily online instruction can be a key driver of students' learning engagement. To enable online teaching, policymakers need to ensure that all children have access to decent digital devices and internet connections at home. The same is true for teachers, who should be additionally supported by professional development and training in the use of digital technologies and distance-teaching pedagogy. The online-education concepts should have a particular focus on helping disadvantaged student groups—those from low-SES families and those with lower initial achievement levels. Even with closed schools, additional interventions by remote tools such as online tutoring by university student volunteers (Carlana and La Ferrara 2021) and instructional support for parents (Angrist et al. 2021) can significantly help children.

Beyond the time of school closures, various measures can be taken within and outside school to help affected students catch up. In school, small-group remedial education lessons instituted after normal school hours could be targeted at students who have shown the largest learning losses. Similarly, summer schools implemented during vacation times could help to make up for some of the lost development of disadvantaged children, although it may be hard to reach those students who are most in need with voluntary programs. To reach at-risk children, the overall intervention strategy will have to include components with low entry barriers that, e.g., depend as little as possible on the initiative of parents to apply for the respective program.

With luck, the pandemic experience could work as a catalyst for the digitalization of schools and the use of adaptive learning software more generally. Given increased inequality, pivoting to more individualized instruction may improve achievement across the entire distribution of students. With the increase in video-based instruction, matching the skills of the teaching force to the new range of tasks could also help to move schools to better performance. Any such measure will be helped if school systems resume suspended student assessments and school accountabil-

ity to better inform schools where individual students stand.

There are also various options outside school to mitigate losses in children's development. Governments could provide low-income families with vouchers to obtain tutoring—instructional programs to convey curricular skills on a one-on-one or small-group basis (e.g., Nickow et al. 2020)—if their children struggle with their learning. Likewise, mentoring—programs that offer children the sustained support and relationship of one-on-one mentors (e.g., Resnjanskij et al. 2021)—could help particularly affected children to reach a positive development trajectory more broadly.

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Jean-Victor Alipour, Christina Langer and Layla O’Kane

Is Working from Home Here to Stay? A Look at 35 Million Job Ads*

In parallel with the health emergency, the Covid-19 pandemic triggered a unique social experiment: the shift to working from home. Surveys show that in the spring of 2020, more than one-third of the workforce in Germany worked mostly or entirely from home, a threefold increase compared to pre-crisis levels (Figure 1). The WfH shock has disrupted traditional work arrangements in many places. And it is becoming increasingly apparent that the experience of the pandemic will have a lasting impact on the work arrangements. Essentially all surveys conducted during the pandemic find a high level of satisfaction with WfH arrangements, even among workers without prior WfH experience (e.g., Stürz et al. 2020; Bonin et al. 2020). One recent study finds that US workers are willing to accept wage cuts of seven percent on average for the option to work from home two to three days per week after the pandemic. Four in ten employees would even look for another job if their current employer required them to return to the office full-time (Barrero et al. 2021a and 2021b). On the employer’s side, the experience of going remote often exceeded expectations. A number of large employers in Germany, such as Siemens, Allianz, or Deutsche Telekom, have already announced that WfH will become a part of their hiring strategy for new staff and a regular option for their employees. Yet, most evidence about the use of WfH during the pandemic and about the expectations for future work arrangements originate from snapshots like firm or employer surveys. Thus, the extent to which WfH will actually stick as well as the labor market ramifications are still obscure.

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ABSTRACT

We analyze the prevalence of working from home (WfH) in Germany using more than 35 million online job advertisements from 2014 to 2021. While a WfH option was rare in job ads before the crisis, the Covid-19 shock led to an unprecedented WfH boom. At the same time, regional, occupational, and sectoral inequalities in access to WfH have decreased during the pandemic. We also document a higher demand for digital skills, teamwork, and adaptability in job ads with a WfH option. We conclude with an outlook for the future of WfH.

We contribute to our understanding of the impact of the Covid-19 pandemic on WfH arrangements by providing systematic evidence on the prevalence of jobs offering a WfH option in Germany.¹ Our dataset comprises over 35 million online job ads from January 2014 to the first quarter of 2021. We document four core findings: first, the share of job ads with a WfH option almost tripled to close to 12 percent between 2019 and 2021. Second, occupations that previously had high *untapped* WfH potential experienced the largest increase in WfH postings. This suggests that companies are increasingly advertising jobs that are suitable for WfH explicitly. Third, we observe a convergence of WfH options across occupational groups, industries, and regions. For example, the gap between urban

¹ In this paper, the term “working from home” is used as an overarching definition that refers to various forms of location-flexible work, including mobile or remote work, which is not limited to working from home.



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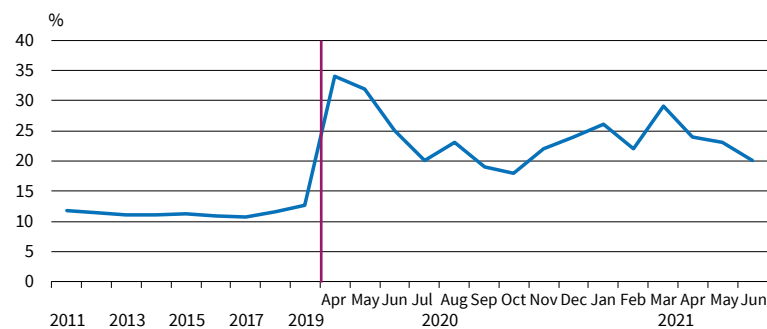
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Figure 1
Proportion of Employees Working Remotely Rises Sharply during the Corona Crisis^a



^a The figure shows the share of employees in Germany who work from home. Source: Data for 2011–2019 are from the EU Labor Force Survey (sometimes or often WfH) and for 2020–2021 from infas 360 (mostly or completely WfH), cf. Alipour et al. (2021). © ifo Institute

and rural counties decreased by 30 percent. Finally, we show that when WfH is advertised, competencies such as adaptability, teamwork, and basic digital skills gain importance.

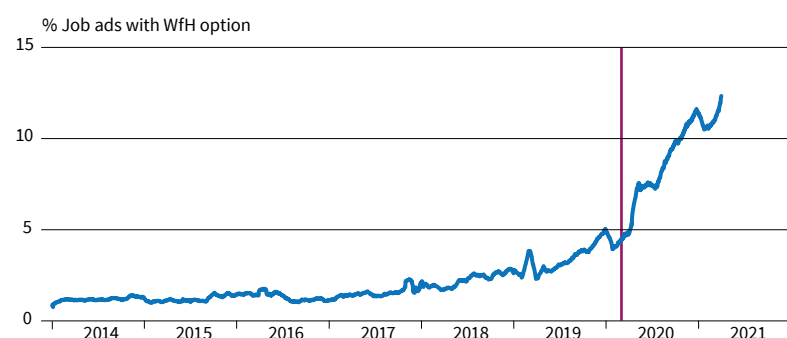
ONLINE JOB ADS OFFER IMMEDIATE INSIGHT INTO THE LABOR MARKET

Job postings are available almost in real time and offer insights into the skills and qualifications required by employers. Thus, job postings basically shed light on the *demand side* of the labor market. In contrast to company or employment surveys, they represent an objective and forward-looking measure, as companies advertise vacancies to create new employment relationships. While it is not possible to determine whether advertised vacancies were ultimately filled, using the (near) universe of online job ads for Germany allows us to analyze the demand for qualifications and skills as well as job characteristics in the German economy at a granular level over time.

We use data from Emsi Burning Glass (BG), a US-based labor market analytics firm specializing in online job ads.² BG scrapes more than 200 relevant online job boards and company websites in Germany

² Data requests can be made to Emsi Burning Glass via uksales@burning-glass.com.

Figure 2
Increased WfH Option in Online Job Ads during the Crisis^a



^a Figure shows the 30-day moving average of job ads with a WfH option as a share of total job ads between January 2014 and March 2021. The vertical line marks March 1, 2020. Source: Data from Emsi Burning Glass. © ifo Institute

for job ads and processes them systematically. After cleaning the data for duplicates, job ads are classified by occupation, industry, and company location. This leaves us with over 35 million job postings between January 2014 to March 2021. To identify ads that explicitly offer a WfH option, we first manually review several hundred job ads and create a list of WfH-related keywords, including *Home Office, Mobiles Arbeiten, Remote Work, Work from Home, Arbeiten von zu Hause, Mobiles Office, Remote Option, flexibler Arbeitsort, Telearbeit, Heimarbeit, Fernarbeit*. Second, we perform computer-automated readings of the job descriptions. If the text contains one or more keywords, we assume that the job offers a WfH option.³

In principle, offering WfH in a job ad does not necessarily imply that a new hire will actually work from home. Likewise, WfH agreements can also be made subsequently without an option having been advertised in a job posting. In our view, these limitations are negligible since we aim to focus on lasting changes in the organization of work. Such changes are more likely if flexible working arrangements are actively advertised in advance, rather than granted as a result of negotiations or following an assessment of individual needs (e.g., due to child care responsibilities).

We supplement our dataset with measures of the theoretical scope for WfH at the regional and occupational level. For this purpose, Alipour et al. (2020) calculate WfH potentials for regions and for occupational groups using the BIBB-BAuA Employment Survey 2018 and administrative data from the Federal Employment Agency. WfH potential is defined as the proportion of jobs (in an occupation or in a region) that can be done from home according to their job profile. According to this definition, 56 percent of employees in Germany have a job that can be performed at least partly from home. In addition to WfH potentials, we also determine pre-crisis untapped WfH potentials, defined as the proportion of employees in the 2018 survey who have a WfH feasible job but who never worked from home before the Covid-19 crisis.

WFH IN JOB ADS HAS MORE THAN TRIPLED SINCE 2019

Figure 2 shows the share of job ads with a WfH option over time. Between 2014 and 2018, the share remained below 2 percent and increased just slightly. The trend slowly accelerated starting in 2018. In 2019, 3.3 percent of all advertisements included a WfH option. The onset of the Covid-19 crisis in March 2020 (vertical line) triggered a remarkable boom in the prevalence of WfH. By the first quarter of 2021, the percentage

³ In principle, jobs can also be advertised for full-time remote work, i.e., without the possibility of working from business premises. A manual review of a random sample suggests that this type of advertisement represents a minority. Therefore, these ads are currently not classified separately. We did not find ads that explicitly rule out the possibility to work from home.

of ads with a WfH option more than tripled compared to 2019, reaching almost 12 percent.

Figure 3 breaks down the time series by occupations with high, medium, and low WfH potential. Occupations with high potential include Specialists in Information and Communication Technology and Management Experts in Financial and Insurance Services. Occupations in fields such as transportation, physical services, or hospitality, on the other hand, exhibit a lower WfH potential. It is not surprising that the share of ads with a WfH option is always higher in occupations with greater potential, and the upward trend in WfH starting in 2018 is primarily driven by these occupations. However, the Covid-19 shock is not limited to a single occupational group but affects the whole economy. In the first quarter of 2021, nearly 20 percent of job ads in occupations with high WfH potential offered a WfH option and nearly seven percent of ads in occupations with low WfH potential offered a WfH option.

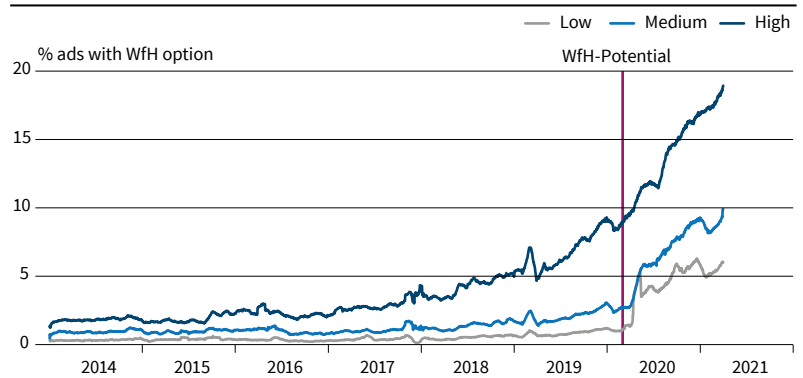
WFH OPTIONS ON THE RISE, ESPECIALLY IN PROFESSIONS WITH UNTAPPED POTENTIAL

The extent to which the upwards trend in WfH was driven by actually upgrading suitable jobs with a WfH option cannot be directly inferred from the raw data. In principle, this trend could also be driven by an increase in demand for jobs that always had a WfH option (composition effect). To shed light on whether employers are increasingly advertising jobs that could be done at home with a WfH option during the crisis, we plot the growth in the share of jobs with a WfH option with respect to their pre-crisis untapped WfH potential (Figure 4). The time series are normalized to 100 starting on 1 March 2020. The figure shows that the strongest growth takes place in occupations in which WfH usage (relative to its potential) was particularly low before the crisis. The share of job ads with a WfH option increased nearly fivefold in these occupations. In contrast, the share with a WfH option in occupations with high WfH potential only doubled. The finding suggests that employers across the economy intensified WfH during the pandemic, particularly by advertising vacant positions that could be performed from home with an explicit WfH option.

REMOTE WORK INCREASINGLY REACHES RURAL AREA

Job postings also contain information on the location of the employer. This makes it possible to examine regional differences in WfH prevalence over time. Figure 5 shows the proportion of ads with a WfH option in East and West Germany as well as in urban and rural regions. Over the entire observation period, WfH options are offered more frequently in metropolitan areas and in Western Germany. However, the increase in offering a WfH option is not exclusively limited to

Figure 3
Development of the Share of Ads with WfH Option Divided by Occupational WfH Potential^a

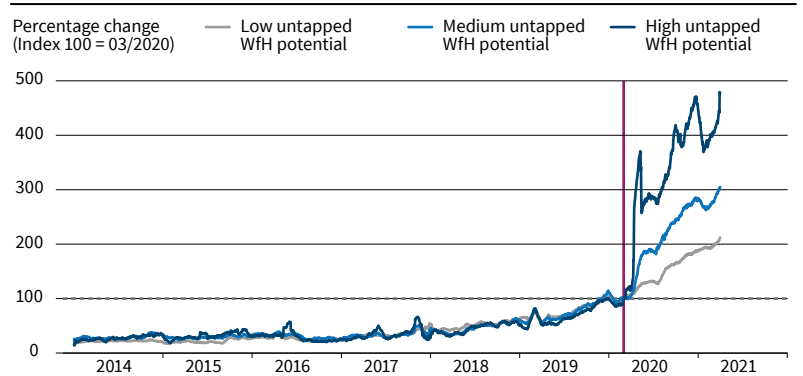


^a Figure shows the 30-day moving average of job ads with a WfH option as a percentage of total job ads divided by occupational WfH potential.

Source: Data from Emsi Burning Glass and Alipour et al. (2020).

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Figure 4
Strongest Growth in the Share of WfH Jobs in Occupations with High Untapped WfH Potential^a



^a Figure shows the percent change in the 30-day moving average of the share of job ads with a WfH option in total job ads by untapped WfH potential (normalized to March 1, 2020 = 100).

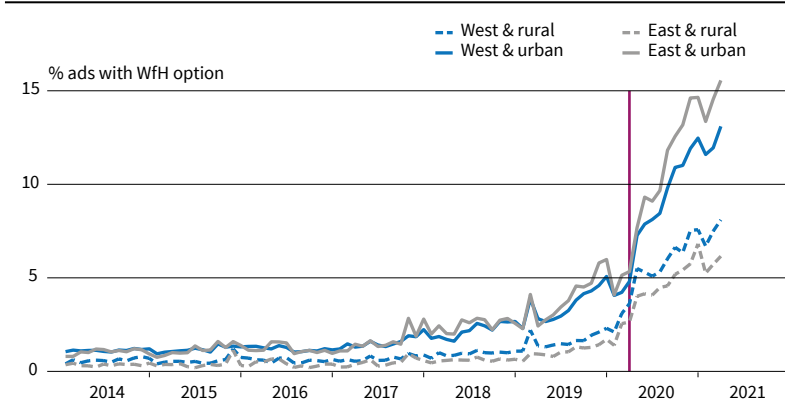
Unused WfH potential is defined as the share of employees with a WfH option who did not work from home before the pandemic (in 2018). The vertical line marks March 1, 2020.

Source: Data from Emsi Burning Glass and Alipour et al. (2020).

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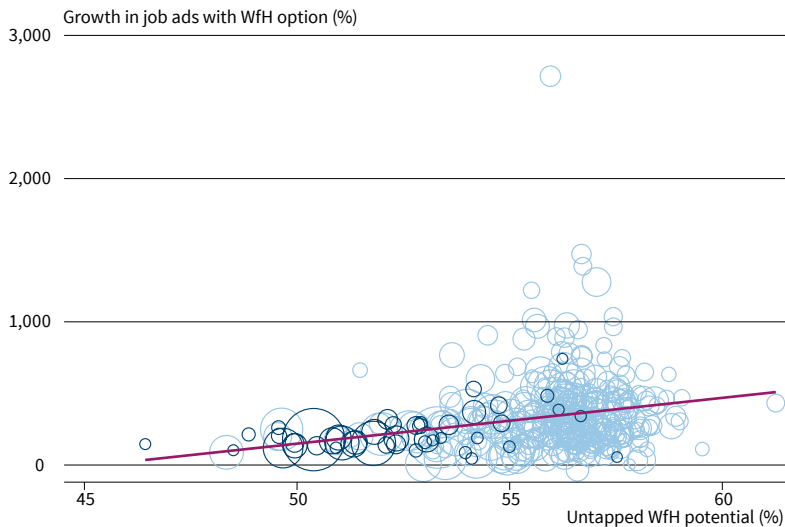
urban areas. In particular, the Covid-19 shock led to a convergence in the WfH shares between rural and urban regions in subsequent months. Figure 6 shows the relationship between the regional WfH options in job ads and *untapped* WfH potential. The size of the bubbles reflects the size of the counties. The highlighted circles indicate independent cities (*kreisfreie Städte*). The positive correlation suggests that at the regional level, growth in WfH options has occurred more strongly in regions with higher untapped potential for flexible work arrangements. This is particularly the case for smaller towns and rural regions. Indeed, the urban-rural gap in access to WfH dropped remarkably during the pandemic (Figure 7): while in 2019, job ads from urban areas were about 2.5 times more likely to offer WfH than job ads from rural areas, the number is only 1.8 in 2020, corresponding to a reduction of about 30 percent. The share in WfH options between March 2020 and March 2021 are particularly high in cities such as Munich (17 percent), Cologne (16 percent), Bonn (16 percent) or Berlin (16 percent).

Figure 5
Development of the WfH Options in Job Postings by Region^a



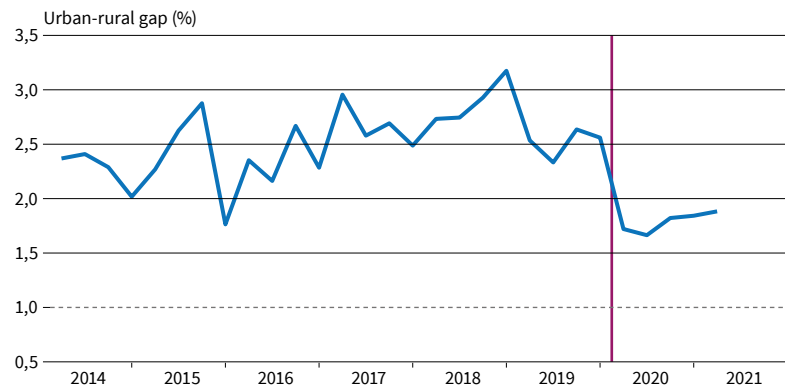
^a Plot shows the share of job ads with a WfH option differentiated by rural and urban areas in Eastern and Western Germany.
Source: Data from Emsi Burning Glass. © ifo Institute

Figure 6
Stronger Growth in WfH Jobs Outside Major Cities^a



^a Plot shows correlation between untapped WfH potential and growth in share of job ads with WfH option between March 2019 - March 2020 and March 2020 - March 2021 at the county level. The size of the circles is proportional to the population of the counties. Circles colored in dark blue mark large independent cities (kreisfreie Städte).
Source: Data from Emsi Burning Glass and Alipour et al. (2020). © ifo Institute

Figure 7
The Urban-Rural Gap in the Share of WfH Jobs Has Decreased during the Crisis^a



^a Maps show the proportion of ads with a WfH option in urban countries relative to the proportion in rural countries.
Source: Data from Emsi Burning Glass. © ifo Institute

But also small counties, such as Gifhorn (21 percent) and Lichtenfels (17 percent), stand out with high values. Figure 8 displays the regional distribution. The left map reports the shares of ads with a WfH option during the pandemic, the right map shows regional WfH potentials. Darker colored areas represent higher values and the red dots indicate big cities. It is apparent that WfH potential and the proportion of job ads with a WfH option are also strongly correlated at the regional level.

WFH ON THE RISE ACROSS ALL SECTORS OF THE ECONOMY

In some sectors, the option to work from home was granted at least to some extent even before the pandemic, but in others this rarely occurred (Figure 9). For example, in 2019 hardly any employers in the Health & Social Services, Education & Teaching, or Hospitality sectors mentioned WfH in their job ads. This trend reversed during the Covid-19 crisis. The percentage of ads with a WfH option has markedly increased across all industries. However, the WfH potential again plays a crucial role: industries that had a higher share of occupations with high WfH potential pre-crisis still display the highest WfH shares in 2020 and 2021. For example, in the ICT sector the offer of WfH in job ads tripled from 9 percent in 2019 to over 17 percent in 2020 to 27 percent in the first quarter of 2021. In the Finance & Insurance industry the WfH share quadrupled (from 6 percent in 2019 to 24 percent in the first quarter of 2021).

TEAMWORK AND DIGITAL SKILLS GAIN IMPORTANCE WHILE WORKING FROM HOME

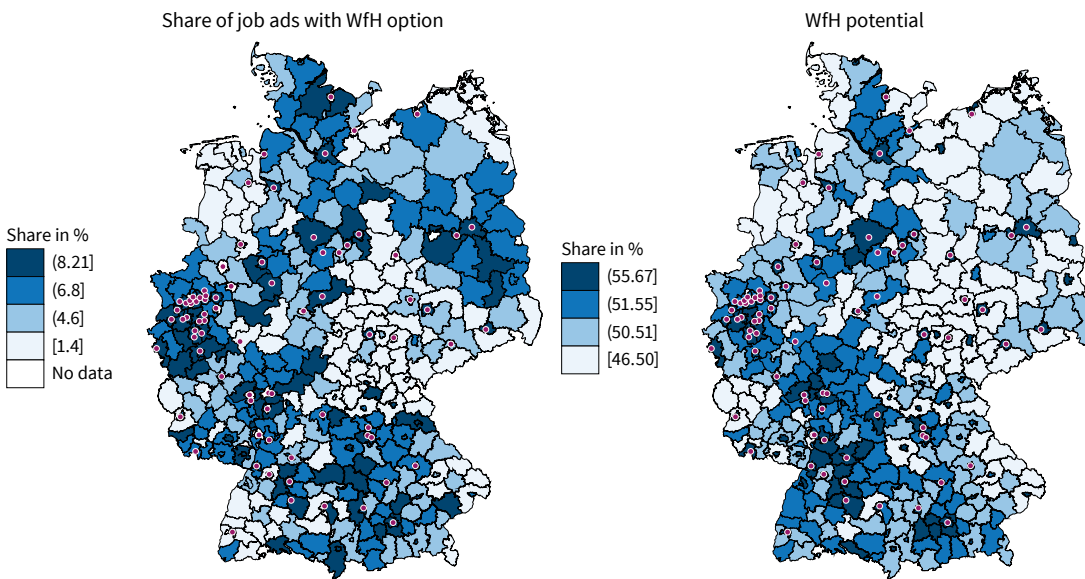
In general, the possibility to offer WfH arrangements depends on a job's task profile and the associated skill requirements. A special feature of job ads is that the postings contain very precise descriptions of the skills demanded by employers. This enables us to evaluate job requirements needed when working from home. We calculate the share of job ads that ask for a given skill for the period from 15 March 2020 to 31 March 2021 separately for ads with and without a WfH option.

There are clear differences in the skills required between jobs with and without a WfH option (Figure 10).⁴ The relocation of well-established workflows from the office to a worker's home leads to drastic changes both in the social and communication context as well as in the organization of work itself; for example, through fewer interactions, increasingly asynchronous communication, and more autonomy of employees. In job ads that are explicitly advertised

⁴ This comparison refers to job postings with and without a WfH option across all occupational groups. To be able to establish systematic relationships beyond simple correlations, more granular analyses within occupational groups would be needed.

Figure 8

Regions with Higher WfH Potential Offer More Jobs with WfH Option^a



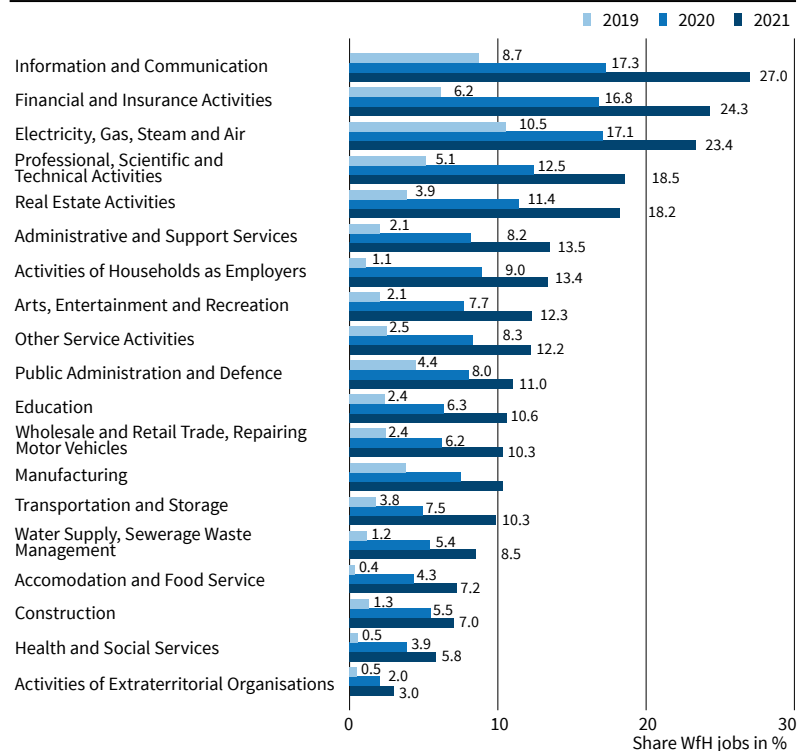
^a Maps show the percentage of ads with WfH options between March 2020 and March 2021 (left) and WfH potential (right) at the county level. Red dots mark major cities. Source: Data from Emsi Burning Glass and Alipour et al. (2020).

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for WfH, skills such as the ability to work in a team, creativity, adaptability, and digital competences are more important. The most commonly demanded skill in jobs with a WfH option is adaptability to change, which is mentioned in 79 percent of these job ads (compared to 66 percent in jobs not advertised for remote work). Communication and teamwork also need to adapt considerably when working from home, as team members are usually not immediately available. Teamwork skills are required in 63 percent of WfH-jobs, compared to 54 percent in jobs without this option. Significant differences are also apparent in basic computer skills. Jobs that explicitly mention a WfH option are almost twice as likely to ask for computer use skills than jobs without a WfH option (43 percent vs. 22 percent). This difference in the explicit statement of specific skills is greatest for the skills computer use (21.1 percentage points difference between jobs with and without a WfH option), teamwork principles (15.8 percentage points), Microsoft Office (15.8 percentage points), and adapting to change (12.7 percentage points).

Figure 11 shows the growth in demand for skills throughout the Covid-19 crisis across all occupational groups. In this figure, we do not explicitly distinguish between job ads with and without WfH options. We consider the period from 1 March 2019 to 14 March 2020 as the pre-crisis period and calculate growth rates compared to the period from 15 March 2020 to 31 March 2021. Increased demand during the pandemic is most evident in healthcare skills (Pathogenic Microorganisms 510 percent, Nursing 52 percent, Medical Terminology 33 percent), IT (Developing Animations 43 percent, Using IT Tools 39 percent, Using

Figure 9
Increased WfH Offer during the Crisis in All Industries^a

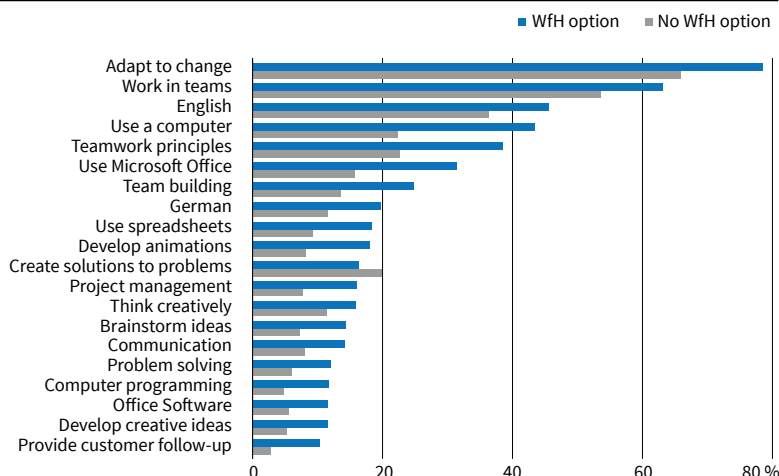


^a The figure shows the share of job ads with a WfH option by industry in Germany. Source: Data from Emsi Burning Glass.

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Presentation Software such as Zoom 29 percent), and Scientific Research (38 percent). Customer service skills (selling services and products 38 percent, maintaining relationships with suppliers 37 percent, satisfying consumers 30 percent, social media 34 percent) or business management (adhering to budget princi-

Figure 10
The Most Important Skills in Jobs with and without WfH Option during the Crisis^a



^a The chart shows the percentage of job ads with and without a WfH option that require each skill. The period considered is between 15 March 2020 and 31 March 2021. Source: Data from Emsi Burning Glass. © ifo Institute

Figure 11
Absolute Growth In Demand for Skills across All Occupations during the Crisis^a



^a The chart shows growth in demand for skills in job ads across all occupations. Shown are the 25 skills with the greatest growth during the crisis. The period March 2019–February 2020 is compared with March 2020–March 2021. Knowledge on Pathogenic Microorganisms has grown by 520% as this specific skill was hardly in demand before the pandemic. This value is not shown in the graph. Source: Data from Emsi Burning Glass. © ifo Institute

ples 80 percent, devising business strategy concepts 30 percent) grow significantly. Some of these shifts may endure beyond the pandemic, others may lose importance as the economy begins to recover. This underscores the importance of developing a better understanding of how disruptive or sustainable the changes triggered by the Covid-19 pandemic are in the labor market.

OUTLOOK

The WfH experiment has shown that workers’ performance generally does not plummet at home. Firm sur-

veys consistently show that a majority of companies in Germany intend to enable WfH permanently (ifo Business Survey May 2020; BSI 2021). The negative stigma that has long been attached to working from home could also be largely related to the fact that in the past managers were unable to adequately assess the performance of remote workers. This often disadvantaged remote workers compared to employees who worked at the office, for example with regard to promotions (Bloom et al. 2015). Emanuel and Harrington (2021) show that switching to remote work generates productivity gains, but higher-performing employees prefer to work at the office to avoid the “out-of-sight-out-of-mind” effect. The result is a productivity gap between those who work from home and those who work from the business premises, which in turn convinces managers of their (false) assumption that remote work can impair performance. The decisive factor for the future of remote work is therefore likely to be whether companies are willing and have the capacity to adapt their management style to a hybrid workforce. Mere investment in digital infrastructure is unlikely to be enough to achieve this. Our study suggests that companies are increasingly gearing their work organization towards working from home. The descriptive analyses cannot necessarily be interpreted as causal. Likewise, crisis-related effects, such as the above-mentioned composition effect, cannot be ruled out even at the current margin. However, the rich information in the dataset has promising potential for more detailed analyses in future research.

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Clara Albrecht, Britta Rude and Tanja Stitteneder*

Afghanistan's Free Fall – Return of the Taliban and Flight as a Last Resort

A variety of factors are driving flight and migration movements in and out of Afghanistan—the Taliban were once responsible for many Afghans having to leave their country—now they are back, and the question is how this might affect future flight movements. Traditionally, migration is driven by both push factors and pull factors. This is also the case in Afghanistan. To better understand the motives behind flight and migration movements, it is necessary to look more closely at the positive developments in the country over the past 20 years, which could now be undone by the return of the Taliban.

PUSH FACTORS OF FLIGHT AND MIGRATION MOVEMENT FROM AFGHANISTAN

Table 1 shows that the push factors for flight and migration decisions in Afghanistan are manifold. They range from political to economic and social to environmental factors. Political factors include terrorism, war, human rights violations and persecution, violence and crime, and corruption and poor governance. Economic factors range from poverty and hunger to poor labor market conditions. Demographic and social factors are driven by the young age structure in the country and poor infrastructure in the education, health, social, and transportation sectors. Afghanistan is particularly affected by climate change and natural disasters, which is why climate refugees are also emerging in the country. Furthermore, there are now exacerbating factors for flight and migration movements that have emerged due to the withdrawal of international troops, the return of the Taliban, and the decline in development aid in the country.

Political Factors

Afghanistan has been marked by conflict, war, and terrorism for many years. In 2021, it ranked last in the Global Peace Index. The country's situation has hardly improved in recent years; in 2009, the country occupied the third-last place (GPI 2021). Afghanistan was the most affected country by terrorism in 2019, a significant deterioration compared to 2002, when the

* ifo Institute.

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ABSTRACT

Afghanistan is one of the poorest countries in the world. In 2020, almost half of the population lived in poverty, and 19.1 million people were hungry. One in three children under the age of five is underdeveloped, and six in ten women experience physical and/or sexual violence in their lifetime. The country ranks last on the Global Peace Index in 2021. Political, economic, social, and environmental factors are driving flight and migration in and out of Afghanistan. The withdrawal of international troops, the return of the Taliban, and the decline in development aid are exacerbating the situation. As of early September 2021, nine out of ten Afghans are suffering from food shortages, and the stagnation of the financial sector poses a problem for aid organizations. Many Afghans are being forced to leave their homes, with internal migration accounting for the majority of migration in Afghanistan. Of those who dare to flee abroad, most move to neighboring Pakistan and Iran. The two countries currently host about 80 percent of Afghan migrants; in comparison, only a few are heading to Western countries.

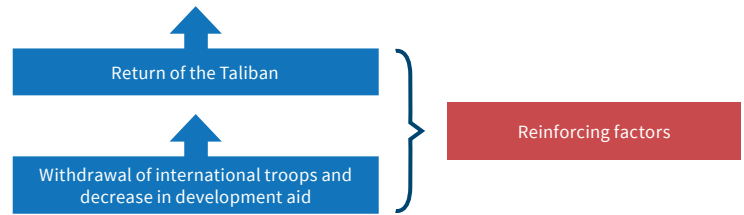
country was ranked 16th in the world. Afghanistan is marked by a history of conflict, which are interstate and intrastate, as well as non-state conflict. In particular, the increased resurgence of the Taliban in 2006 was accompanied by an increase in violence in the country. Combat-related deaths increased from 1,595 in 2005 to 29,940 in 2019 (World Bank 2021a). The internal conflict between the Taliban and the government has intensified since 2013 and was the bloodiest conflict in the world in 2018 (UCDP 2021, see Figure 1). In addition, the Islamic State (IS) became active in the country in early 2015, leading to an increase in terrorist attacks, particularly in the capital Kabul. Between 2009 and 2018, the murder rate nearly doubled (World Bank 2021a). The return of the Taliban could intensify the conflict between IS and the Taliban. There are already first signs of increased terrorist activity in the country (The Wall Street Journal 2021).

On the Human Rights and Rule of Law Index, Afghanistan ranks 44th out of 172 countries in 2021, with Egypt taking the first place as the weakest coun-

Table 1

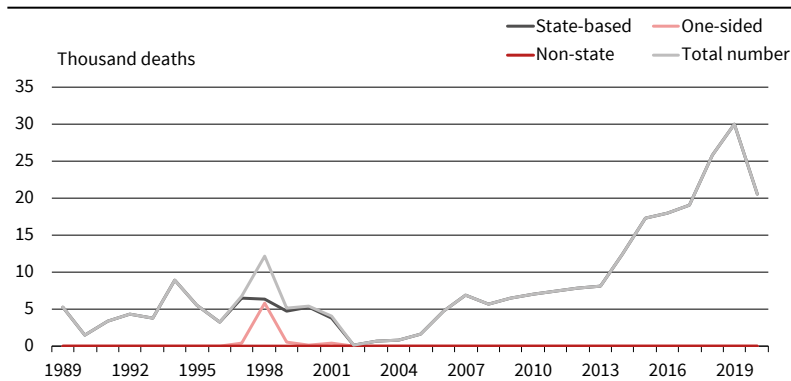
Push Factors Behind Flight and Migration Movements from Afghanistan

Political factors	Economic factors	Demographic and social factors	Environmental factors
Terrorism and war	Poverty and hunger	Young age structure	Climate change
Persecution and human rights violations	Unemployment	Poor access to education and health	Natural disasters
Violence and crime	Informality and precarious forms of employment	Poor social protection	
Corruption and poor governance		Low infrastructure	



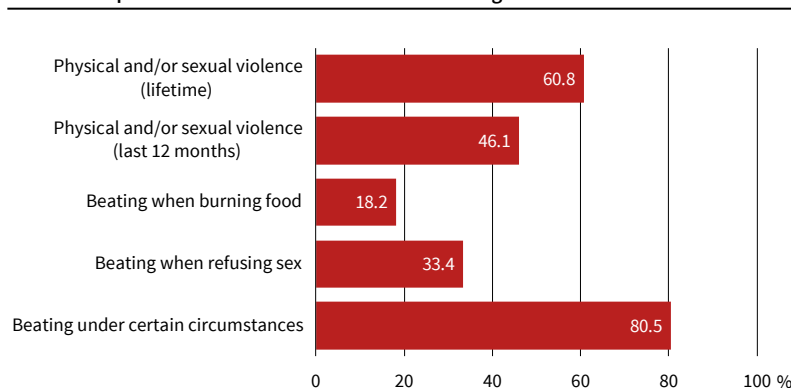
Source: ifo Institute.

Figure 1
Conflict-related Deaths



Source: UCDP (2021). © ifo Institute

Figure 2
Women's Experiences and Beliefs about Violence in Afghanistan



Source: World Bank (2021); OECD (2021). © ifo Institute

these laws were poorly enforced (HRW 2021a). When women reported crimes, they faced social stigma, family pressure, invasive investigations, and prison sentences. According to Medica Mondiale (2021), rape is often equated with adultery, which is illegal in Afghanistan. There are already early signs of human rights violations, especially against women, by the Taliban since their invasion of Kabul (HRW 2021b).

In 2015, 46.1 percent of women experienced physical or sexual violence within a 12-month period (World Bank 2021). This puts Afghanistan at the top of a list of countries for which data was reported between 2012 and 2017. If we look at the likelihood of becoming a victim of intimate partner violence during a woman's lifetime, the number is even higher: six out of ten women are affected (OECD 2021). The acceptance of violence against women is deeply rooted in social norms and general beliefs. Eight in ten women believe that beating a woman is justified under certain circumstances (OECD 2021; World Bank 2021a, see Figure 2). Child marriage (nearly three in ten girls are married before age 18), teenage pregnancy (with an incidence of 12 percent), and prenatal sex discrimination further worsen women's situations and lead to a vicious cycle of violence. Under the renewed Taliban rule, this cycle could be further fueled. The Afghan Ministry of Women's Affairs has already been closed by the Taliban and replaced by the dreaded Ministry of Morals (Aljazeera 2021).

Afghanistan's public sector has suffered from corruption, weak rule of law, and low quality of legislation over the past two decades; in contrast, accountability has improved significantly over time. According to the 2020 BTI Transformation Index, Afghanistan ranks 14th from the bottom, down from 7th in 2006. According to the Worldwide Governance Indicators (WGI), the country ranked among the bottom in anti-corruption and rule of law in 1996, with

try (The Global Economy 2021). Nevertheless, there are signs of significant progress in recent years, as Afghanistan ranked 24th in 2006 when compared globally (The Fund for Peace 2021). Violations of women's rights are a particular problem. While reforms to protect women and girls from violence were implemented between 2001 and mid-August 2021,

little improvement since then. In contrast, the quality of legislation increased. There were slight positive developments in political stability and the absence of violence and terror. Government efficiency, while low overall, has improved since 1996. At that time, Afghanistan was the worst-performing country in the world in terms of the quality of public and civil services. Despite significant progress in accountability, institutions remain fragmented along ethnic, class, clan, racial, and religious lines, with the country ranking 37th on the 2021 Fractionalized Elites Index (The Global Economy 2021). The return of the Taliban is likely to throw the country back into a period of ultra-weak institutions.

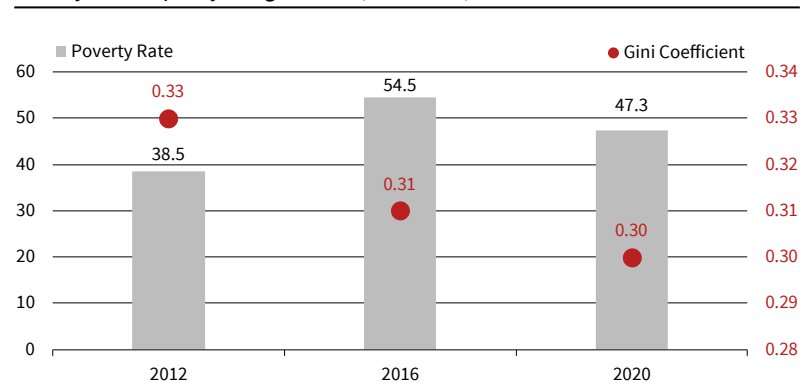
Economic Factors

In 2020, almost half of the population—15 million people—lived below the national poverty line. In 2012, 10.3 million people, or 38.5 percent of the population, lived in poverty, and 59.5 percent of the population (19.1 million people) suffered from hunger. The GINI coefficient has stagnated at 0.3, a value similar to that in Bangladesh or Pakistan (see Figure 3). Since the return of the Taliban, the situation has deteriorated drastically, and the country is on the verge of economic collapse (Norwegian Refugee Council 2021). According to a World Food Program survey, nine out of ten respondents suffer from food shortages (WFP 2021). In addition, food prices are rising dramatically. There are reports that the prices of flour, oil, gas, and beans have increased by 63 percent in one month (Save the Children 2021). Many public-sector employees have not received money for at least a month (Alarabiya News 2021), and the United Nations warns of a humanitarian disaster (UN News 2021).

The labor force participation rate of the Afghan population has stagnated at around 50 percent since 2000 (see Figure 4). This is mainly due to the still low inclusion of women in the labor market. Although women's participation shows an increase from only 15.4 percent in 2000 to 22.7 percent in 2019, it is still far from other low- and middle-income countries. Unemployment was persistently high at 11.7 percent in 2020 and has increased over time (World Bank 2021a). The NEET rate (share of youth not in education, employment, or training) was one of the highest in the world at 42.0 percent in 2017, again driven by young women (World Bank 2021a). In 2014, by contrast, the NEET share was 9.5 percent. The labor market situation in the country has continued to change drastically since the Taliban invasion. In early September 50 percent of respondents to a WFP survey reported job losses (WFP 2021). The exclusion of women from the labor market could have a negative impact on the household income of many families.

In 2000, more than nine out of ten workers were in precarious employment (World Bank 2021a). While

Figure 3
Poverty and Inequality in Afghanistan (2012–2020)



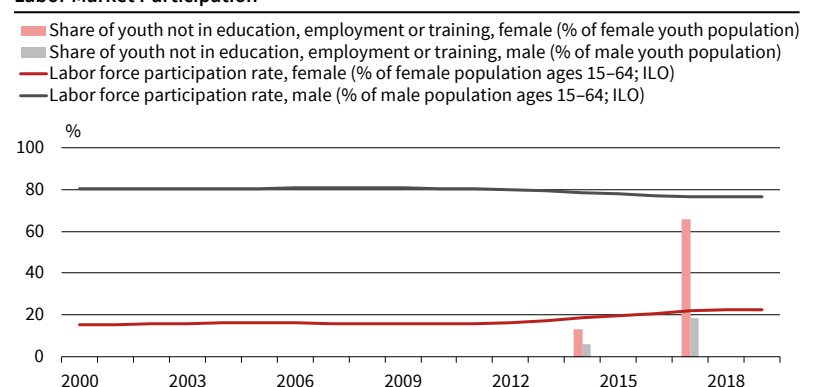
Source: NSIA (2021).

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this share was only eight out of ten workers in 2019, it is still high by international standards. In 2000, of the employed women, almost all were exposed to precarious employment. While this proportion fell slightly to nine in ten women in 2019, it is still higher than in most other countries. Estimates from 2012 show that the majority of employment is informal and among the highest in the world at 80–90 percent (ILO 2012). Low productivity in the agricultural sector, gender norms, and poor human capital endowments have held back employment growth in the country (ACAPS 2013). Since employment growth may also have been dependent on international aid (ACAPS 2013), this may have led to a lack of sustained employment growth (ILO 2012). All of this is likely to be exacerbated by the current situation in the country.

While the population's access to the financial sector has improved in recent years, it still falls behind that in most countries. In 2017, 15 percent of the population had a bank account, compared with 9 percent in 2011 (Findex 2021). By comparison, 70 percent of the population in South Asia had a bank account in 2017 (Findex 2021). Again, Afghan women fall far behind Afghans at 7 percent. Since the Taliban invasion of Kabul, the financial sector in the country has been on the verge of stagnation. Since the central bank no

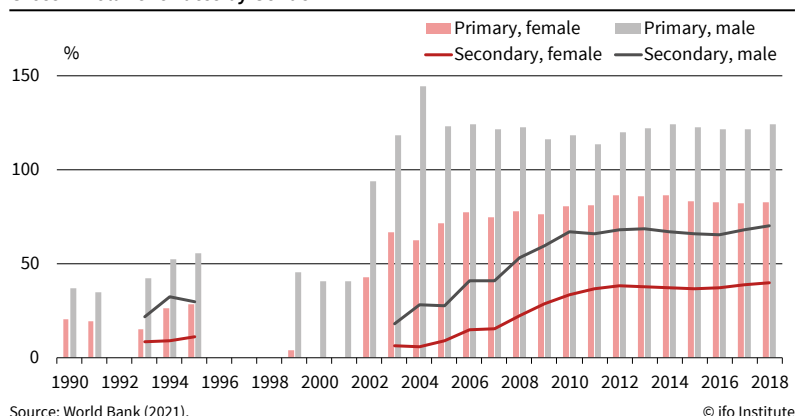
Figure 4
Labor Market Participation



Source: World Bank; ILO (2021).

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Figure 5
Gross Enrollment Rates by Gender



Source: World Bank (2021).

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longer has access to its reserves, much of which are stored abroad, money circulation in the country is limited. It is estimated that the Taliban has access to 0.1–0.2 percent of the USD 9.0 billion in international reserves (Aljazeera 2021). Afghans are currently not allowed to withdraw more than USD 200 per week (France24 2021), and aid organizations report problems bringing money into the country to pay their staff or continue their projects (Norwegian Refugee Council 2021).

For years, researchers have pointed out the country’s dependence on international development assistance (Karimi 2020). In 2019, the rate of official development assistance per capita was 16 times higher than the average in low- to middle-income countries (World Bank 2021a). The abrupt withdrawal of many aid workers and the freezing of aid funds now clearly demonstrates this. Based on a survey of 150 aid organizations in September, OCHA data shows that three-quarters of these aid organizations are having trouble continuing their projects after the Taliban came to power (USAID 2021). Currently, 62 percent of their projects are paused, which is additionally due to security concerns and the ban on female employees working (USAID 2021). It is currently unclear how development assistance will continue. In order to gain access to international reserves, the Taliban will most likely have to follow international standards and conditions (Financial Times 2021).

Demographic and Social Factors

Afghanistan’s population is one of the youngest in the world, with 55.5 percent of the population in 2020 of working age and 41.8 percent under 15 years old (World Bank 2021a). Only 2.6 percent of the population is older than 64. Youth pose a major burden on the country’s working population. Afghanistan’s dependency ratio was 80.1 percent in 2020 and is among the highest in the world (World Bank 2021a). This means that each working-age person must provide for 0.8 people under 15 or over 64. Turning this burden into a demographic dividend will require ma-

ior investments in the country’s youth, particularly with regard to gender equality (UNFPA 2015). The labor market is having great difficulty absorbing the influx of circa 450,000 new workers annually (Reuters 2020).

Since the end of the first Taliban rule in 2001, during which Afghan girls were almost completely excluded from the educational system, Afghan girls had caught up by mid-August 2021. Figure 5 shows that the gross enrollment rate for girls in primary education was zero at the end of the first Taliban rule in 2001. By 2018, the proportion of girls in primary education had increased significantly to 82.9 percent (World Bank 2021a). The picture is similar for gross enrollment rates at the secondary level, although enrollment rates are lower for both genders. Tertiary enrollment rates are extremely low, with only five out of every 100 women and 15 out of every 100 men attending tertiary education institutions (World Bank 2021a). The return of the Taliban could have extreme negative consequences for human capital formation in the country, especially for girls. Already, they are once again being excluded from secondary education and can only participate in tertiary education under strict conditions.

Afghanistan has made some progress in the health sector in recent years. Life expectancy has increased, and infant mortality rates and child underdevelopment have fallen (World Bank 2021a). While only one in ten births were attended by skilled health personnel in 2000, this was true for nearly six in ten in 2019 (World Bank 2019). However, maternal mortality rates have increased since 2010, and in 2019, one in three children was still underdeveloped (World Bank 2021a). The health-sector infrastructure has seen little development in recent years, and the country continues to fall behind globally. Even though the number of doctors has increased, there is a lack of well-trained personnel. Violence and conflict further affect the provision of health services (Mirzazada 2021). In addition, there are institutional factors and a lack of financial resources. Cultural norms, particularly regarding gender equality, also play a role. The pandemic poses additional challenge to the health system in the country. The health sector has been in a dire state since the return of the Taliban. Based on USAID data, barely 20 percent of health facilities are currently operational (USAID 2021). There is a lack of medicines and medical equipment. Salaries are not paid and vaccination campaigns are suspended. Some women no longer dare to seek medical help (USAID 2021).

A 2012 World Bank analysis concluded that social protection programs are fragmented and unbudgeted (World Bank 2012). While innovative approaches exist, they are mainly implemented by humanitarian aid organizations (Humanitarian Response 2013). Moreover, in 2018 scholars pointed to the unsustainable design of the pension program in Afghanistan (Reuters 2018).

A 2016 study by UNICEF concluded that social safety nets are limited and almost nonexistent for women and children (UNICEF 2016). This problem is now likely to worsen under the Taliban. UNICEF, for example, states that many of the organization's in-country programs targeting women and girls are currently facing operational difficulties (UNICEF 2021).

Access to public services had improved greatly by 2020. For example, half of the population had access to at least basic sanitation services in 2019, compared with only 21.9 percent in 2000 (World Bank 2021a). Still, only one in three had access to purified drinking water in 2019. Electricity is now available to the population almost universally, and some have begun to use the Internet (8.3 percent of the population). Sixty percent of the population is connected to a public cell phone service. New migration flows in the country and uncertainties about the Taliban's financial situation are now likely to complicate both access to and maintenance of public services among the population.

Environmental Factors

Afghanistan ranks 175 out of 181 countries in the 2019 ND Gain Index (ND Gain 2021). This is due to high vulnerability, but also low capacity, to address climate change impacts. Afghanistan is the 12th most vulnerable country to climate change and the 10th least prepared country. Afghanistan's vulnerability to climate change has increased compared to 2001. At that time, the country ranked 157th on the ND-GAIN index.

In addition, the population is exposed to a high risk of natural disasters. The country ranks fourth on the INFORM Risk Index in 2021, particularly due to its high exposure to earthquakes and droughts (DRMKC 2021). The Afghan population is facing severe drought this year, similar to 2017 and 2018, with the last drought resulting in 13.5 million people suffering increased food shortages (Climate Change Project 2021). According to WFP reports, the Taliban do not have the resources to address hunger among the population (Reuters 2021).

PULL FACTORS OF FLIGHT AND MIGRATION MOVEMENTS FROM AFGHANISTAN

It is not only push factors that lead to flight and migration movements in and out of Afghanistan. Similar to observations in other countries, pull factors

are also at work. These are listed in Table 2 and are divided into political, economic, demographic, and social factors.

FLIGHT AND MIGRATION MOVEMENTS IN AND OUT OF AFGHANISTAN

As a consequence, refugee and migration movements have long been a part of Afghanistan's history. Around 6 million of the 70.8 million displaced people worldwide are Afghans who were forced to leave their homes (UNHCR 2021b and 2021c). Afghanistan is thus the country with the third largest displaced population in the world after Syria and Venezuela, and the country of origin of the second largest refugee group. As of May 2021, Afghanistan has nearly 390,000 displaced persons—approximately 80 percent of whom are women and children. Since the beginning of the year, the number has even exceeded half a million.

Recurring natural disasters such as droughts, floods, storms, and earthquakes, as well as ongoing violence and conflict, are the main causes of migration in and out of Afghanistan. In 2020 alone, natural disasters caused 46,000 internal movements and conflict and violence caused 404,000 internal movements (iDMC 2021). By the end of 2020, Afghanistan recorded over 3.5 million internally displaced persons due to conflict and over 1 million internally displaced persons due to natural disasters. Thus, internally displaced Afghans account for well over half of all Afghan migrants (UNHCR 2021b). Many of the Afghans who flee within the country's borders move from the north to the south of the country, where they seek shelter with family and acquaintances. This "system of informal assistance" is under severe strain due to additional stresses such as the prolonged drought that affects 80 percent of the country, and 60 percent of farmers, as well as the rapid spread of the Corona pandemic (Reliefweb 2021a). Food and water shortages, as well as a lack of medicines and medical supplies, continue to spread. Covid-19 vaccinations are also progressing slowly (UN Refugee Agency 2021; UNHCR 2021b): only 4 percent of the nearly 40 million Afghans are currently vaccinated against Covid-19 (UNICEF 2021c).

Most Afghans who leave the country travel to neighboring Pakistan and Iran, where more than 80 percent of those who have fled the country currently reside (UNHCR 2021b; Media Service Integration 2021a). In contrast, international migration to other, mainly Western, countries is low (see Figure 6). Many

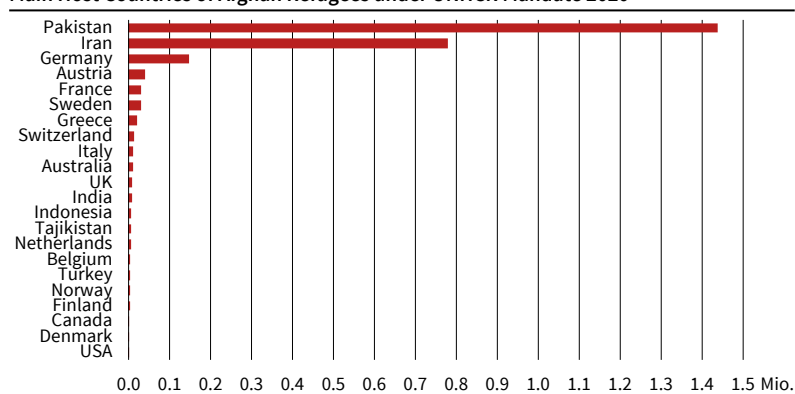
Table 2

Pull Factors Behind Flight and Migration Movements from Afghanistan

Political factors	Economic factors	Demographic and social factors
Asylum law	Labor market conditions in the host country	Social networks
Political interests	Education	Media, culture and language

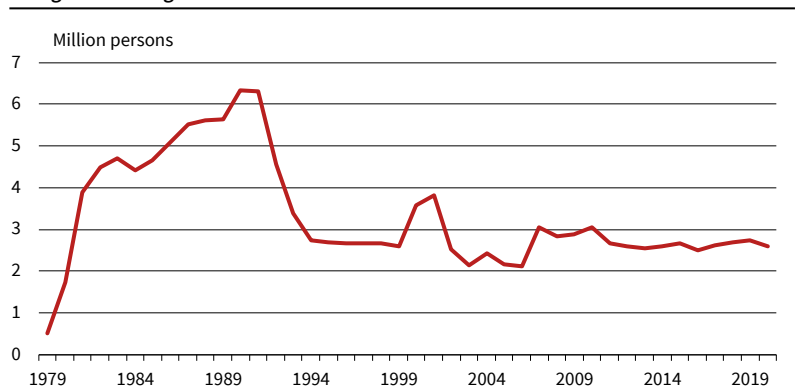
Source: ifo Institute.

Figure 6
Main Host Countries of Afghan Refugees under UNHCR Mandate 2020



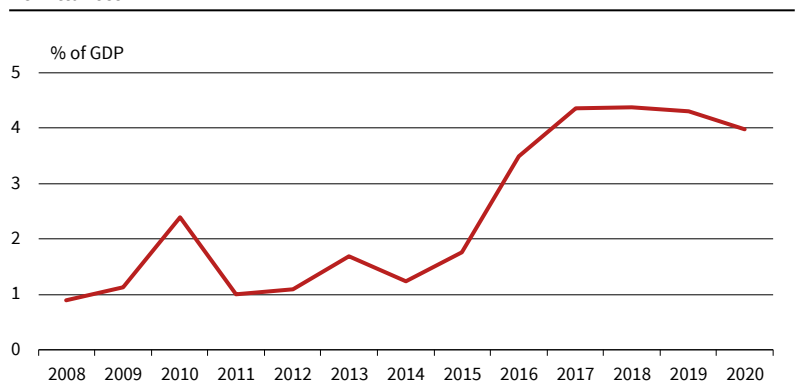
Source: UNHCR (2021a). © ifo Institute

Figure 7
Refugees from Afghanistan



Source: UNHCR (2021a). © ifo Institute

Figure 8
Remittances



Source: World Bank (2021). © ifo Institute

of the refugees are stuck in a vicious circle: on the one hand, returning to their home country is dangerous or not possible at all; on the other hand, they do not receive residence permits in the host countries and are housed in refugee camps (UNHCR 2021c). For the poorer population in particular, the costs and the associated distance to the destination country are decisive factors in the decision of where to flee (Cai 2020).

The number of undocumented migrants who leave the country without official travel documents is probably high. It is estimated that roughly 20,000

to 30,000 Afghans fled the country through irregular channels each week in August 2021 (CNN 2021). However, usually only those who are healthy and have the necessary financial means can flee, whether within the region or abroad. Those left behind are likely to be the injured, the sick, the elderly, and the very poorest in the country.

DEVELOPMENT OF REFUGEE FLOWS OVER TIME

In the 1980s, the flow of refugees from Afghanistan increased rapidly. After the Soviet Union invasion, many Afghans left the country. Most went to Pakistan and Iran (Amstutz 1994), and a resistance movement against Soviet rule developed: on one side was the Afghan-Soviet government, and on the other side were the Islamic resistance forces, the Mujahideen, who received both military and humanitarian support from the United States (Reliefweb 2021b).¹

After the end of the Soviet-Afghan war and the withdrawal of the Soviets in the late 1980s, the government was overthrown by the resistance forces in the early 1990s. However, subgroups also formed within the resistance, with a more moderate orientation on the one hand and a more radical orientation on the other. In the early 1990s, the number of refugees was small compared to the years before. Kabul, however, continued to be contested by the various resistance groups (Asylum Insight 2021), and the Taliban gained prominence in the ongoing civil war (Reliefweb 2021b).

The rise of the Taliban in the 1990s pushed many Afghans into flight (Reliefweb 2021b; Asylum Insight 2021). Women and girls were largely excluded from public life and denied fundamental human rights. After the defeat of the Taliban in 2001, UNHCR initiated extensive mass repatriation programs. With the end of the regime, the number of Afghan refugees also decreased, and in the following years it rose again slightly to the level of the mid-1990s (see Figure 7).

THE ROLE OF REMITTANCES FROM ABROAD

About 10 percent of Afghan households receive remittances from Afghans living abroad. They have been shown to contribute to poverty reduction in the recipient country and increase household investment in education (UNDP 2011). In 2020, formal remittances from abroad to Afghanistan totalled USD 788 million and accounted for nearly 4 percent of Afghanistan’s GDP. Since 2014, there has been a massive increase in remittances from abroad (see Figure 8). In absolute terms, private contributions coming from abroad experienced an increase of over 300 percent. This development is closely related to a fundamental deterioration in the overall economic, political, and

¹ See also the documentary series “Afghanistan - A Wounded Land”, about the history and development of Afghanistan in the last decades.

security situation. The Taliban intensified their military interventions which caused a sharp increase in civilian casualties. At the same time, government aid payments from abroad saw a sharp reduction, and the political system became increasingly fragile after the 2014 presidential elections (World Bank 2021e).

The informal financial sector plays a major role in Afghanistan. It can be assumed that the real amount of money coming from abroad is much higher, as by far the largest part of the money Afghans receive from abroad enters the country through informal channels. The informal financial transaction system known as hawala, which transfers cash at low costs across national borders through intermediaries, is estimated to account for up to 90 percent of Afghan financial transactions. The regular banking sector does not play a significant role for the population in Afghanistan, with only 15 percent of Afghans owning a bank account. Since the Taliban came to power, the importance of money entering the country through hawala has increased further as the Afghan financial system is on the verge of collapse and national cash reserves are running low (Ross and Barratt 2021).

OUTLOOK: WHERE WILL FLEEING AFGHANS FIND REFUGE IN THE FUTURE?

The burden on neighboring countries is great and could now intensify. The United Nations estimates that re-established Taliban rule could cause over half a million people to flee abroad by the end of the year. An overwhelming proportion of those fleeing are expected to attempt to reach neighboring Pakistan and Iran, and the UN believes it is imperative that the international community provide immediate and sustained support to the first-receiving countries. The humanitarian assistance program currently underway for Afghan refugees in Iran, Pakistan, and other host countries in the region is underfunded. Pakistan, with nearly 1.5 million Afghan refugees already in the country, has announced that it will not allow Afghans without valid travel documents to enter the country (UNHCR 2021). The first 700 Afghan refugees without valid documents have already been deported (ZEIT ONLINE 2021). Iran, where 780,000 Afghans already found refuge in 2020, announced that it would only accommodate Afghan refugees in temporary camps near the border until they could be returned to Afghanistan.²

According to UNHCR data (UNHCR 2021d), the number of irregular border crossings into neighboring countries has sharply increased. The vast majority of refugees currently arriving in Pakistan and Iran do not have valid identity documents and cite the poor security situation in Afghanistan as the reason for their flight.

² In addition to the officially registered Afghan refugees, estimates suggest that there are an additional 1 million unregistered refugees in Pakistan and an additional 2 million in Iran (MPI 2021).

POTENTIAL HOST COUNTRIES OF AFGHANS SEEKING PROTECTION

It is currently unclear how evacuations from Afghanistan will proceed. More than 123,000 civilians have been flown out to third countries as part of the US-led air evacuation mission through Kabul airport. It is unsure how many of these were Afghan citizens (BBC 2021). The German contribution to the evacuation of vulnerable people was small. In total, German forces flew just over 5,300 people out of the country (Bundesregierung 2021). This included 231 local agents working for the NATO-led international Afghanistan mission and 848 dependents. According to the German Foreign Ministry, the number of people in Afghanistan that Germany considers itself to be responsible for amounts to about 50,000 (ZEIT ONLINE 2021a). Meanwhile, it remains unclear how a safe evacuation to Germany could be arranged. The air route is currently not to be considered due to the poor security situation. Evacuation by land would be most likely via Uzbekistan or Pakistan. There are currently no indications of a possible screening process for those entitled to leave the country (ZEIT ONLINE 2021b).

Worldwide, the general willingness to accept refugees is relatively low. For the time being, Germany has pledged to take in 2,600 Afghans in particular need of protection as part of a resettlement program. These would then not have to apply for asylum but would immediately receive a residence permit. Other European countries, including Austria, Poland, and Switzerland, have already ruled out taking in Afghans and are instead relying on increased security measures at their external borders (BBC 2021). Turkey, the main transit country for Afghan refugees en route to Europe and the country that has taken in the most refugees worldwide, has also not shown an increased willingness to accept additional Afghan refugees. To make it generally more difficult for refugees to enter the country in the long term, Turkey has begun building a border wall on the Turkish-Iranian border (BBC 2021). Greece, which has already received the most Afghan refugees within Europe in the past (25 percent), has expanded a border fence on the Greek-Turkish border to 37 km (Lang et al. 2021).

The US approach in this regard could be a signal. As part of the evacuation mission, the US has already taken in 64,000 Afghans in need of protection, 49,000 of whom are still housed in US military bases. The US has been able to evacuate another 18,000 Afghans to other countries via the airlift, where they are also housed in military bases, mainly in Germany (New York Times 2021). In order to be able to take in additional people in need of protection, the US government has sharply raised the upper limit of refugees to be taken in. For the fiscal year beginning October 1, US President Joe Biden pledged to take in up to 125,000 refugees (NPR 2021). The United Nations refugee agency UNHCR welcomes this decision and hopes

that this will be seen as a signal by other countries to also increase refugee quotas (UNHCR 2021f). Canada and the United Kingdom have each pledged to accept up to 20,000 Afghans in need of special protection. Australia has reserved 3,000 places for Afghans in its annual refugee quota (Mediendienst Integration 2021b).

A common strategy at the EU level is not in sight. Although EU Commissioner for Home Affairs Ylva Johansson considers it a “moral duty” for Europe to evacuate Afghans in need of protection and bring them to safety and EU Commission President Ursula von der Leyen has criticized member states for refusing to cooperate transnationally (NPR 2021a), and despite the European Parliament calling on member states to cooperate to facilitate the evacuation of vulnerable Afghans (European Parliament 2021), as of mid-September 2021, no concrete measures have been adopted at the EU level. At the end of August, the Home Affairs ministers of the EU member states announced in a joint statement at a special meeting that they did not want to incentivize illegal migration (Tagesschau 2021). However, the fear of a similarly high influx of migrants is unfounded in the medium term, as the either closed or heavily secured border crossings out of Afghanistan towards Europe represent a major hurdle. In addition, human smuggling rings are not affordable for the vast majority of Afghans (MPI 2021).³

RECOMMENDATIONS FOR ACTION

The need for humanitarian assistance in Afghanistan is immense. 18.4 million people in the country are in need of humanitarian assistance, including 9.7 million children (UNICEF 2021). The UN issued an emergency appeal in mid-September for additional donations to address the humanitarian crisis. According to the appeal, USD 606 million is needed by the end of 2021 (UNOCHA 2021). So far, only 20 percent of this has been raised (UNOCHA 2021). Against the backdrop outlined above, the following recommendations for action in the area of refugee and development policy can be derived.

Refugee Policy

The outlook for refugees in and from Afghanistan is extremely difficult. Since the resurgence of the Taliban, land and air routes have been closed. As a result, leaving through regular routes is no longer an option, leading to an increase in demand for irregular border crossings by illegal trafficking groups. To remain undetected by immigration officials and avoid Taliban-staffed border checkpoints, routes have become

³ In 2015, the Afghan Ministry of Refugees and Repatriation estimated that a transit to Europe organized through smuggling rings costs USD 7,500, an amount that few Afghans could even afford considering that one-third of the population lives below the poverty line (MPI 2021).

even more remote. Migration has thus become more costly and dangerous (Mixed Migration Centre 2021). Even those who make it out of Afghanistan face a difficult future—usually without access to education, adequate health care, employment, and social connection to the domestic society.

It should be ensured that Afghans in particular need of protection continue to have access to evacuation opportunities. To this end, bureaucratic hurdles must be removed, and underlying processes reviewed. New and digital technologies can help in sending the necessary documents and in the efficient organization of formalities. Family reunification should be ensured, and funds should be made available for refugee camps in Afghanistan’s neighboring countries. However, refugee camps should not be a long-term condition, especially for children. The international community should work together on solutions to prevent refugee camps from being a permanent condition for refugees.

Development Policy

To address hunger and the dire state of the health sector, financial aid should be channeled through international organizations, such as UNHCR, and NGOs working in the country. This could also be an alternative to traditional development projects, which often operate through local governments on the ground. Innovative approaches are needed to establish a functioning financial sector. In the long term, the provision of international funds should be linked to the fulfillment of international standards. The international community should stand up for the rights of women and girls in Afghanistan and work on innovative solutions to make education accessible to girls both in the country and in refugee camps.

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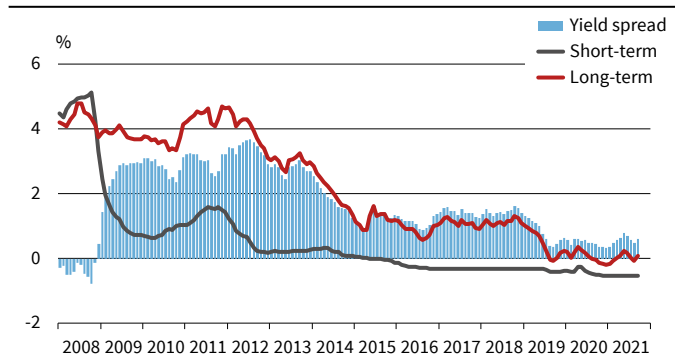
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Statistics Update

Financial Conditions in the Euro Area

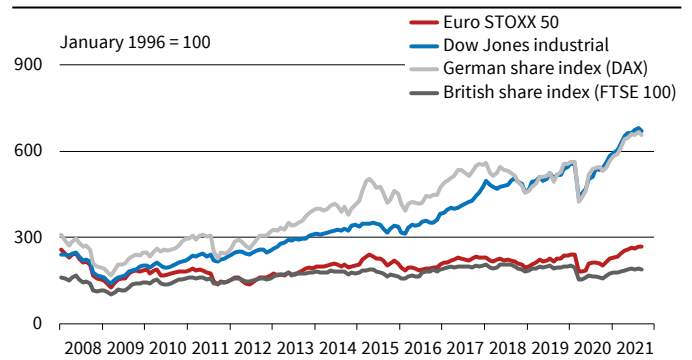
Nominal Interest Rates^a



^a Weighted average (GDP weights).
Source: European Central Bank; calculations by the ifo Institute. © ifo Institute

In the three-month period from July 2021 to September 2021 short-term interest rates remained rather stable: the three-month EURIBOR rate was -0.54% in July 2021 and reached -0.55% in August and September 2021. The ten-year bond yields increased from 0.02% in July 2021 to 0.07% in September 2021, while the yield spread also increased from 0.56% to 0.62% between July 2021 and September 2021.

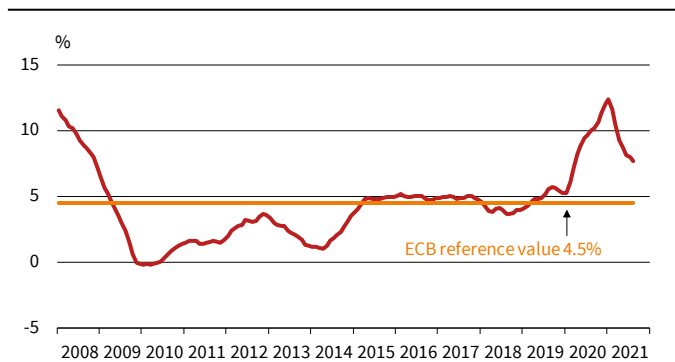
Stock Market Indices



Source: Deutsche Börse; Dow Jones; FTSE; STOXX. © ifo Institute

The global fears about the spread of the Coronavirus, oil price drops caused by an oil price war between Russia and the OPEC countries, and the possibility of a recession led to the stock market crash in March 2020, and global stocks saw a severe downturn in this month. The subsequent steady rise of the German stock index DAX continued in September 2021, averaging 15,584 points compared to 15,573 points in July 2021, while the UK FTSE-100 also increased from 7,048 to 7,065 points over the same period. Furthermore, the Euro STOXX amounted to 4,158 in September 2021, up from 4,063 in July 2021. Yet, the Dow Jones Industrial decreased, averaging 34,719 points in September 2021, compared to 34,798 points in July 2021.

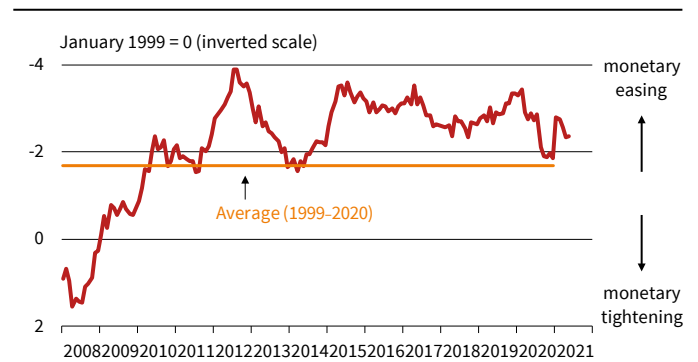
Change in M3^a



^a Annual percentage change (3-month moving average).
Source: European Central Bank. © ifo Institute

The annual growth rate of M3 decreased to 7.4% in September 2021, from 7.9% in August 2021. The three-month average of the annual growth rate of M3 over the period from July 2021 to September 2021 reached 7.6%.

Monetary Conditions Index

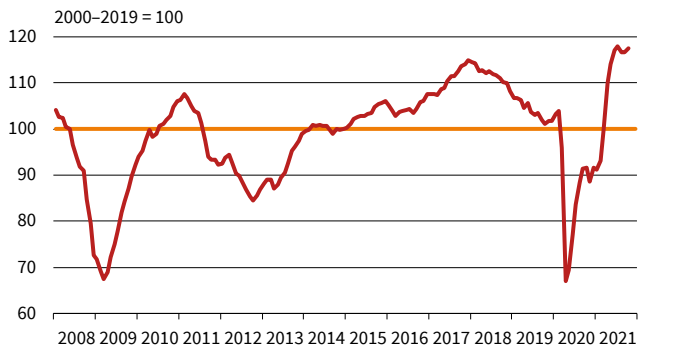


Source: European Commission. © ifo Institute

Between April 2010 and July 2011, the monetary conditions index had remained stable. Its rapid upward trend since August 2011 had led to the first peak in July 2012, signaling greater monetary easing. In particular, this was the result of decreasing real short-term interest rates. In May 2017 the index had reached one of the highest levels in the investigated period since 2007 and its slow downward trend was observed thereafter. A steady upward trend that had prevailed since October 2018 was abruptly halted in March 2020 with the onset of the Covid-19 crisis, and the index continued to decline in 2020. The rapid increase of the index in January 2021 was followed by a decline in the period February to April 2021, while a slight increase was again recorded in May 2021.

EU Survey Results

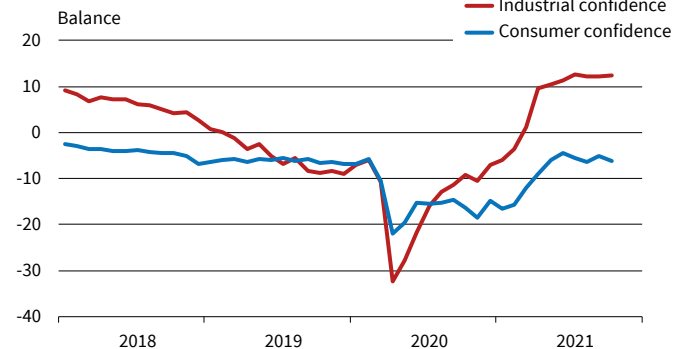
EU27 Economic Sentiment Indicator
Seasonally adjusted



Source: European Commission. © ifo Institute

In October 2021, the *Economic Sentiment Indicator* (ESI) increased in both the EU (+ 0.9 points, to 117.6) and the euro area (+ 0.8 points, to 118.6). In the EU27, the ESI's increase in October 2021 was driven by improving confidence in services, construction, and retail trade, while confidence remained virtually unchanged in industry.

EU27 Industrial and Consumer Confidence Indicators
Percentage balance, seasonally adjusted

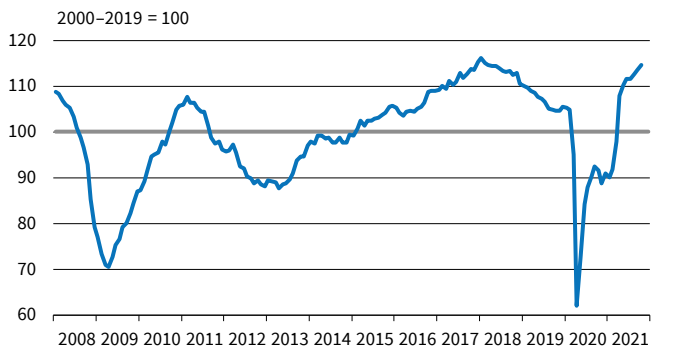


Source: European Commission. © ifo Institute

* The industrial confidence indicator is an average of responses (balances) to the questions on production expectations, order-books and stocks (the latter with inverted sign).
** New consumer confidence indicators, calculated as an arithmetic average of the following questions: financial and general economic situation (over the next 12 months), unemployment expectations (over the next 12 months) and savings (over the next 12 months). Seasonally adjusted data.

In October 2021, the *industrial confidence indicator* increased by 0.3 points in the EU and by 0.1 points in the euro area, compared to September 2021. However, the *consumer confidence indicator* decreased by 0.9 points in the EU and by 0.8 points in the euro area in October 2021, compared to September 2021.

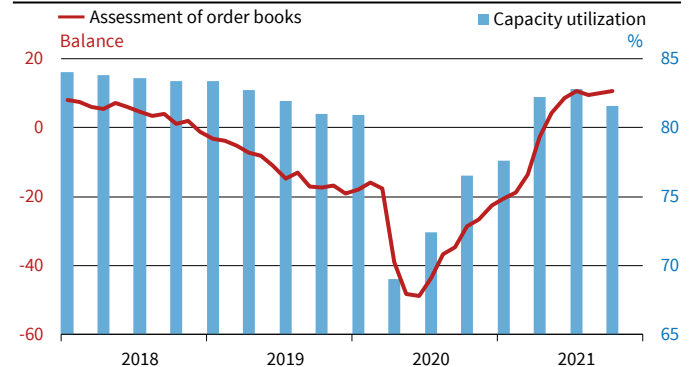
EU27 Employment Expectations Indicator
Seasonally adjusted



Source: European Commission. © ifo Institute

In October 2021, the *Employment Expectations Indicator* (EEI) continued to increase: + 1.2 points to 114.7 in the EU and 1.1 points to 114.5 in the euro area.

EU27 Capacity Utilisation and Order Books in the Manufacturing Industry
Seasonally adjusted

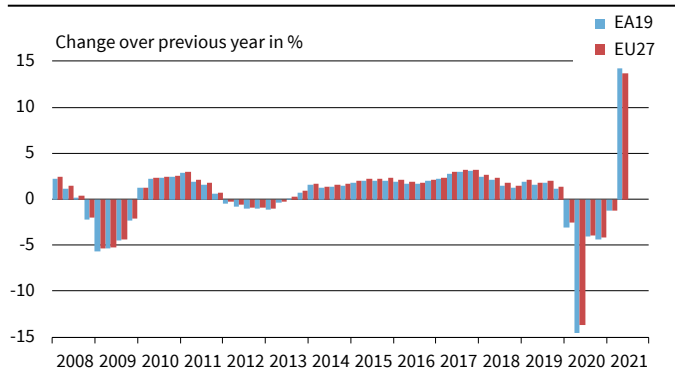


Source: European Commission. © ifo Institute

Managers' assessment of *order books* reached 10.6 in October 2021, compared to 10.0 in September 2021. In August 2021 the indicator had amounted to 9.3. *Capacity utilization* stood at 81.6 in the fourth quarter of 2021, down from 82.8 in the third quarter of 2021.

Euro Area Indicators

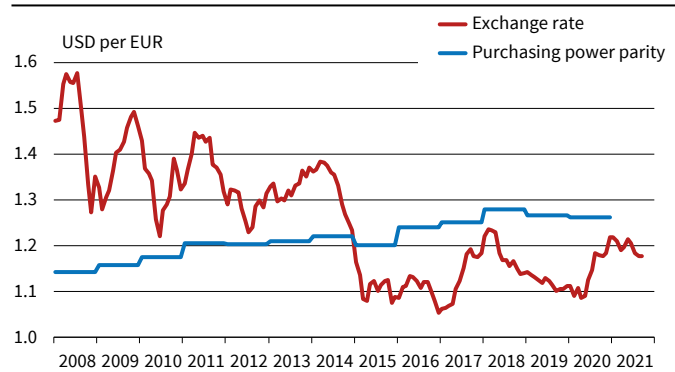
Gross Domestic Product in Constant 2015 Prices



Source: Eurostat. © ifo Institute

According to the Eurostat estimates, seasonally adjusted GDP increased by 2.2% in the euro area and by 2.1% in the EU during the second quarter of 2021, compared to the previous quarter. Compared to the second quarter of 2020, i.e., year over year, (seasonally adjusted) GDP increased by 14.3% in the EA19 and by 13.8% in the EU27 in the second quarter of 2021.

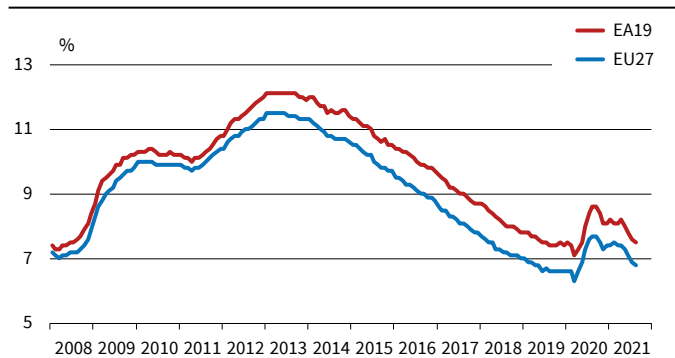
Exchange Rate of the Euro and Purchasing Power Parity



Source: European Central Bank; OECD; calculations by the ifo Institute. © ifo Institute

The exchange rate of the euro against the US dollar averaged approximately 1.18 \$/€ between July 2021 and September 2021. (In June 2021 the rate had also amounted to around 1.20 \$/€.)

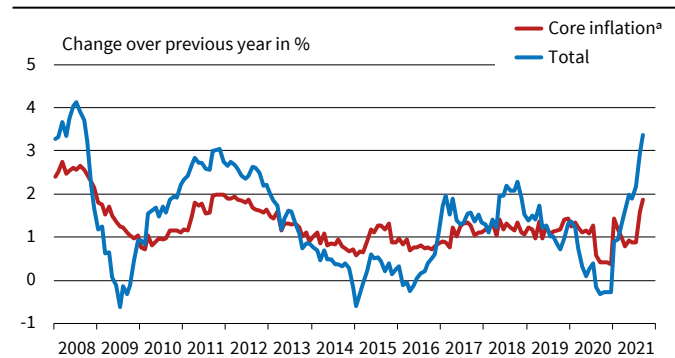
Unemployment Rate



Source: Eurostat. © ifo Institute

Euro area unemployment (seasonally adjusted) amounted to 7.5% in August 2021, down from 7.6% in July 2021. The EU27 unemployment rate was 6.8% in August 2021, down from 6.9% in July 2021. In August 2021 the lowest unemployment rate was recorded in Czechia (2.9%), Malta and the Netherlands (both 3.2%), while the rate was highest in Greece (13.2%) and Spain (14.0%).

Euro Area Inflation Rate (HICP)



Source: Eurostat. © ifo Institute

Euro area annual inflation (HICP) amounted to 3.4% in September 2021, up from 3.0% in August 2021. Year-on-year EA19 core inflation (excluding energy and unprocessed foods) was 1.9% in September 2021, up from 1.6% in August 2021.