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Who should be afraid of a stop in Russian energy supply?

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EXECUTIVE SUMMARY

- The EU can easily manage an immediate embargo on crude oil imports from Russia.** Within two months or so, OPEC members could step up crude oil production to the levels of H2 2018 (which implies +3.3 Mbb/d vs. Q1 2022) and Norway, the US and the UK could add another +0.5 Mbb/d to global output. This would more than compensate for Russia's current crude oil exports of 3 Mbb/d. If the EU implemented the embargo today, we would expect to see two months of higher and volatile global oil prices, after which they should recede to current levels.
- In contrast, an immediate stop to natural gas imports from Russia would likely cause serious energy-supply disruptions for many EU member states.** Should a "black-out" scenario – i.e. a full stop to all Russian energy exports – materialize by Q3 2022, countries that are heavily reliant on Russian gas, including Bulgaria, Hungary, Germany, Czechia, Slovakia, the Netherlands, Austria, Romania, Italy and Poland, would struggle the most next winter. Tapping new suppliers, substitution of gas by other energy sources and some self-rationing by the private sector in response to sky-high prices would not be enough to close the emerging gas supply gap.
- With the risk of a "black-out" scenario sizeable and the associated economic costs potentially significant, it is high time to prepare for all eventualities.** Mitigating policy measures need to be taken now, including (i) preparing the public for the downside scenario; (ii) boosting gas buffers via gas-saving efforts; (iii) agreeing on an EU gas shortage mutualization scheme, as well as a joint purchase scheme for LNG to keep a lid on supply disruptions and in turn economic costs and (iv) deciding on a fair burden-sharing compromise across economic sectors at the national level to ring-fence the negative implications on industry and in turn employment.

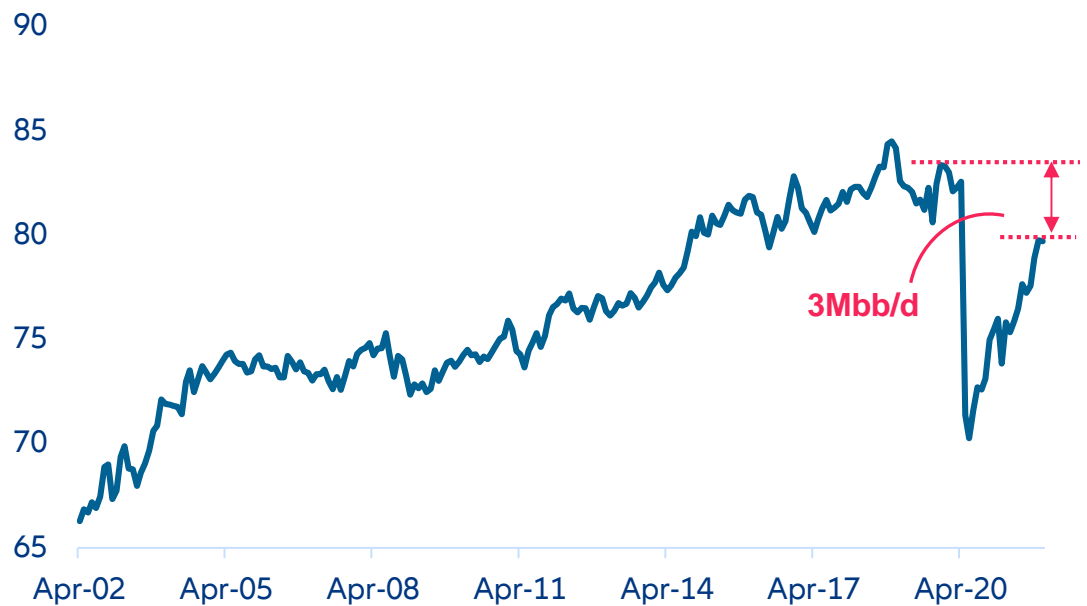
The EU can easily manage an immediate embargo on crude oil imports from Russia.

Following several weeks of discussions, the EU Commission last week put forward a new package of sanctions against Russia, including a six-month phase-out of Russian crude imports and a phase-out of refined products by year-end. Hungary, Slovakia and Czechia would be exempted until 2024. These countries have been reluctant to sign up to sanctions involving energy, given their heavy dependence on Russian oil and on their neighbors for supplies as they are landlocked.

However, according to our calculations, Europe could implement a crude oil embargo immediately. Russia provides about 3mn barrels per day (Mbb/d) of crude oil to global markets. Although not all of that supply goes to Europe, the amount is a good benchmark for the volume of crude oil that would need to be substituted via other suppliers to balance supply and

theoretically stabilize prices in the event of an embargo. In our view, OPEC alone could substitute for the 3 Mbb/d of crude if it increases its average production of 28.2 Mbb/d in Q1 2022 to the level of H2 2018. Back then, in the absence of any agreed oil-production cuts, OPEC provided an average 31.5 Mbb/d. If agreed on, going back to this level should not take longer than one or two months.¹ Moreover, Western non-OPEC oil producers (Norway, US, UK) are estimated to be able to provide an additional 0.5 Mbb/d of crude to European markets in the near term. Looking at global crude production supports our view: Global output is currently about 3 Mbb/d below pre-Covid-19 levels (see Figure 1) while Russian output is the same as prior to the pandemic. As a result, non-Russian producers should be able to close this gap, albeit after one or two months.

Figure 1: Global crude oil production (Mbb/d)



Source: Refinitiv, Allianz Research

In the meantime, the EU could tap its strategic reserves first and refill them later. An embargo would, however, require some redistribution from member states with a low dependence on Russian oil to those with high dependence. If such a redistribution is not instantly possible, some countries, such as Hungary and Slovakia, could be spared from an embargo at the start – unless of course an energy embargo is implemented by Russia.

An immediate embargo would likely push up global oil prices to a range of 130-150 USD/bbl. However, once the Russia supply gap has been closed, oil prices should move back to the recent 100-110 USD/bbl range.

¹ Of course, the question remains whether OPEC will agree to step up production by that amount. Last week, OPEC+ (which includes some non-OPEC members, including Russia) decided to raise its June production target by 0.432 Mbb/d, in line with an existing plan to unwind output cuts made in 2020 when the Covid-19 pandemic hit demand and prices. Further increases of the same amount are planned for the coming months until September. Saudi Arabia and the UAE have the capacity to raise oil supply more rapidly. There are no signs yet that they intend to do so, but we think there is a good chance that they eventually change policy, not least with an eye on their strategic interests in the oil market.

However, an immediate stop to natural gas imports from Russia is likely to cause serious supply disruptions.

An embargo on natural gas imports from Russia has also been under discussion in recent weeks. It has gained traction since Russia halted gas deliveries to Poland and Bulgaria on 27 April after both countries refused to accept the government's new requirement for energy payments from the EU to be made in RUB. Russia looks set to increase pressure on other European countries by wielding the threat of a gas cut-off. It cannot be ruled out that gas supplies to other EU countries will be halted in the second half of May when a number of gas payments are reportedly falling due. In such a scenario, Russia would pre-empt a decision by the EU to opt for an embargo.

However, in the short term, replacing gas imports from Russia will prove much more challenging for Europe. For one thing, many member states are much more dependent on Russia for gas supplies than oil. Moreover, global gas markets are already very tight. As a result, finding alternative suppliers such as Qatar, Algeria or Nigeria is easier said than done. Not only are there practical obstacles to expanding production quickly but negotiations can also be a challenge. A case in point: Germany's struggles to secure a deal with Qatar, given the disagreement over the duration of the contract and oil indexation. However, the US has agreed to ship an additional 15bn cubic meters of liquefied natural gas (LNG) to Europe by the end of this year. Rather than going cold turkey, we think that the Russia supply gap could be reduced by two-thirds, in line with the EU commitment to reducing gas imports by two-thirds within a year.

In order to determine which European countries can cope with an end to natural gas imports from Russia, and which ones would struggle next winter without Russian gas, we simulate the evolution of gas reserves across European countries' storage facilities over the next 12 months. For each country, we take into account the following variables: the current amount of gas in storage; the annual trend of daily gas consumption (10-year average) in order to take into account the lower gas consumption during summer months; the assumption that non-Russian gas supply will continue to flow (but not increase) and the assumption that gas imports from Russia will be halted on 16 May². Thus, the calculations represent the rather conservative worst-case scenario, leaving out any potential adjustments in supply and demand, as well as potential substitution from alternative energy sources. Nonetheless, these hypothetical calculations are helpful in identifying those EU members that would be really challenged by a stop in Russian gas supply.

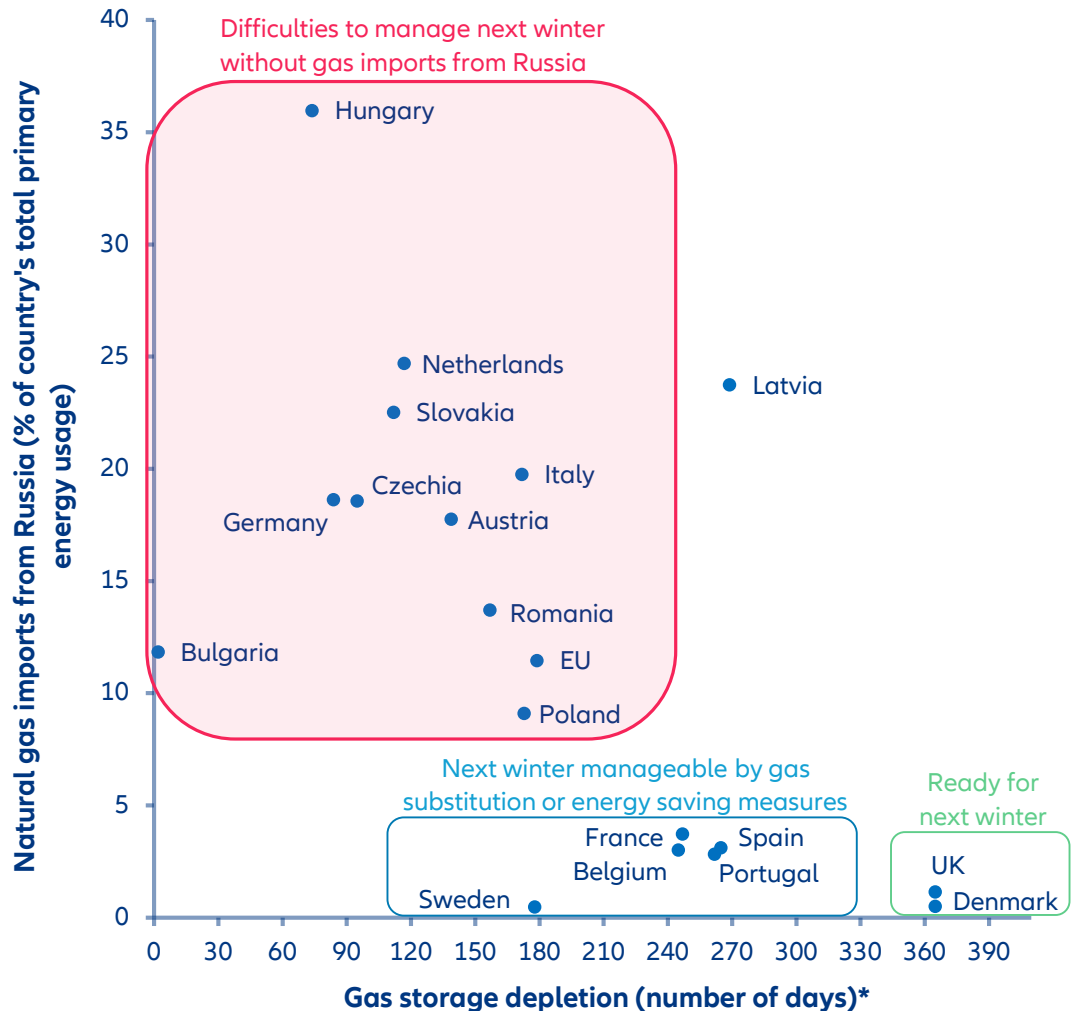
Figure 2 provides the key results. On the horizontal axis, we show the number of days until gas storage is depleted under the above assumptions for each individual country. We plot this against the dependency on Russian gas (gas imports from Russia as a share of each country's total primary energy usage) on the vertical axis.

We identify seven European countries that are only slightly or not at all dependent on gas imports from Russia and will be easily able to manage the next winter in the event of a European gas embargo or a Russian supply cut-off. Denmark and the UK import hardly any gas from Russia so it does not matter, for instance, that the UK has only very little storage capacity (1% of annual needs). In Sweden, gas accounts for only 1.7% of the primary energy usage. That number is higher for Belgium, France, Portugal and Spain (between 16% and 28%) but these countries cover the majority of their needs from other sources so that imports from Russia account for less than 5% of their total primary energy needs. It should be feasible for these

² The assumed cut-off date can be changed. A later date would result in a later depletion, if any, of gas reserves in storage. For Poland and Bulgaria, the actual cut-off date from Russian gas (27 April 2022) was taken.

countries to substitute these amounts or to reduce usage by energy-saving measures by next winter.

Figure 2: Russian gas dependency vs. gas-storage depletion (number of days after 15 May if imports from Russia are halted on 16 May)



* Assumption: Gas imports from Russia halted on 16 May (27 April for Poland and Bulgaria)

Sources: Eurostat, Gas Infrastructure Europe, Our World in Data, Allianz Research

On the other hand, we find that Latvia is significantly dependent on gas imports from Russia: Gas accounts for 24% of Latvia's primary energy usage and Russia is its sole supplier for this commodity. Latvia is home to a comparatively huge storage facility that is currently 35% full. This would cover the country's needs for the next nine months. However, it is the only functional storage in the Baltic region and has until now also supplied Estonia, Lithuania and Finland with gas. Both Estonia and Lithuania decided in early April 2022 to stop importing Russian gas. Hence it is not entirely clear how the current gas in the storage facility will be distributed between the countries in the region. As a result, Latvia may be safe for somewhat less than nine months.

Ten other countries in Western and Central Europe are heavily dependent on gas imports from Russia and would have serious difficulties to manage the next winter without them. In all these countries, at least 9% of primary energy usage has been covered by Russian gas in recent years

and gas storage could be depleted within six months, at the latest, if Russian supplies are halted in mid-May and no substitution or energy-savings measures are taken in the near term. Bulgaria, which was cut off from Russian gas supplies by Gazprom on 27 April, has the least gas in storage, covering just 3% of annual consumption. According to our simulation, it would run out of gas in the second half of May itself. However, both the Bulgarian and Polish governments have announced that they have secured sufficient alternative supplies of gas. We tend to believe this, for now, since the cut-off has not led to any announcement of rationing as yet.

Beyond Bulgaria, Hungary appears most vulnerable to a cut-off from Russian gas, which accounts for 36% of its primary energy usage. Without any mitigating measures, Hungary's gas storage would run dry after 2.5 months following a cut-off in mid-May. Germany and Czechia would be next in line (after about 3 months), followed by Slovakia and the Netherlands (4 months), Austria and Romania (5 months) and Italy and Poland (6 months). Poland's example shows that relatively full storage (77%) is not enough to allow a country to survive a whole year on its own if the storage facility is comparatively small. As indicated above, some alleviating supply and demand adjustments will be likely in the event of a Russian gas supply stop. But it is unlikely that all the vulnerable EU members would manage the next winter without heavy economic costs.

Preparing for a black-out scenario is essential to cushion the impact on the EU economy.

Cutting off the whole EU or most member states from Russian gas supplies, or an EU decision to impose a gas import embargo, would ring in a "black-out" scenario.³ The risks of such a scenario are clearly on the rise.

We previously calculated that Germany could face a 13% gas supply gap, taking into consideration the scope of tapping alternative suppliers, substitution measures and self-rationing of the private sector amid very high gas prices.⁴ This result can, broadly speaking, be expected for the other vulnerable countries identified above, with the scope of measures varying depending on the degree of gas reliance on Russia. We conclude from this calculation and our simulation in this report that such a supply gap would call for gas rationing.

While there remains a lot of uncertainty over the full implications of a black-out scenario for the European economic outlook, policy can help mitigate the impact. In particular, we see four best practices when it comes to preparing for and navigating through a "black-out" scenario:

1. **Prepare the public for the downside scenario:** Governments and policymakers need to raise awareness of the very high and rising risk of a "black-out" scenario to rally support among the population. Up until now, gas consumers have been sticking to business as usual. Governments should invest much more effort into raising awareness of how households can save energy.
2. **Start boosting gas buffers today:** Governments need to prepare today for the materialization of a "black-out" scenario. Every day and every terawatt hour counts once gas imports from Russia come to a halt. Governments should already start incentivizing gas savings today and fill up storage facilities as much as possible (even beyond their own needs, as for example in Austria where storage capacities are unusually large) so as to boost storage levels in anticipation of the colder winter months. Measures could include gas rationing for public buildings, monetary incentives for households keeping their gas consumption below a certain threshold etc. More generally, governments should refrain from drowning out gas price signals via price caps and direct price subsidies. Instead, policy

³ See our report [Economic Outlook: Energy, trade and financial shockwaves](#).

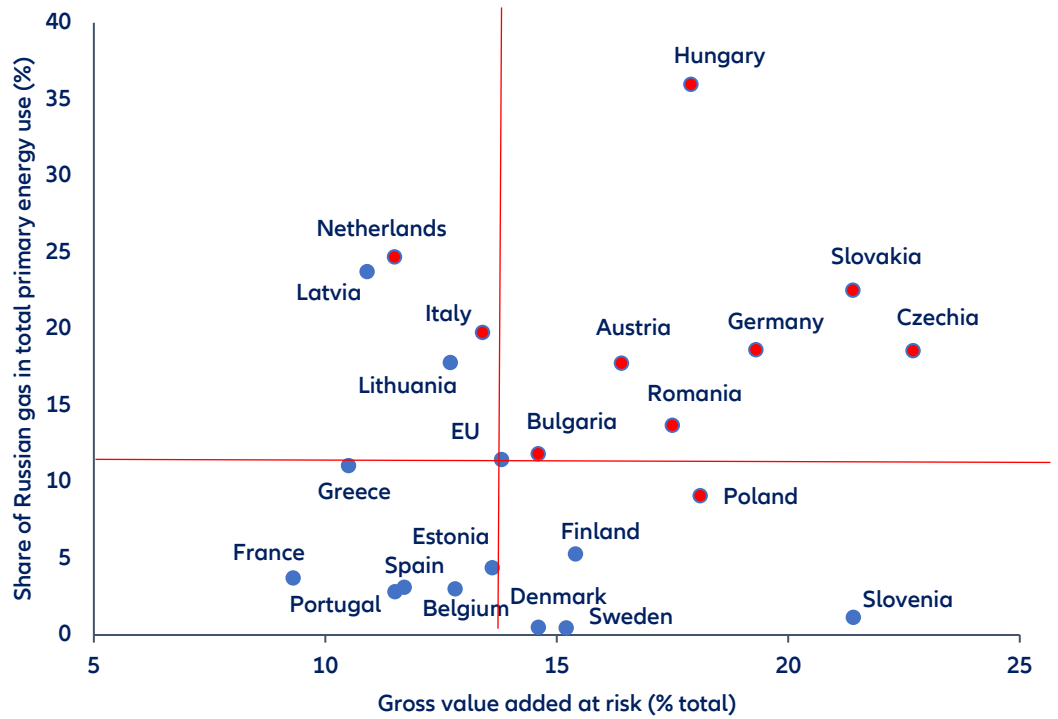
⁴ See our report [Germany: Limiting economic pain from going cold turkey on Russian Gas](#).

support should largely shift to lump-sum compensation for vulnerable households. In a previous report, we found that a supply cut for non-energy uses of oil & gas would increase the supply for energy use by +10% in Germany, +9% in France and about +6% for Italy, Spain and the UK.⁵

3. **Develop an EU gas shortage mutualization to help keep a lid on supply disruptions:** While member states more dependent on gas imports from Russia are more vulnerable, the whole EU stands to suffer if any single economy enters into a sharp and long-lasting recession. To entice heavily exposed economies to sign up to a gas embargo and to reduce disruptions to individual economies, the EU should attempt to mutualize the potential gas shortage by putting forward a burden-sharing plan, with gas-saving targets for every country. As a reminder, the share of Russian gas in total energy consumption ranges from 0.5% in Sweden and Denmark to almost 40% in Hungary, but the EU average stands at below 12%. In practice, this would mean countries with low dependency levels (Figure 3 – lower left quadrant) such as France, Belgium and Spain would divert energy savings to those heavily exposed, including Hungary, Czechia, Slovakia and Germany. A redistribution of gas in storage and non-Russian gas imports among member states is certainly challenging as gas supply routes are less flexible. However, in combination with fuel-switching (from gas to coal and nuclear power, for example) and tapping alternative suppliers – via a joint EU purchase scheme for LNG to maximize its bargaining power – it is likely to reduce the negative economic implications for the most vulnerable countries.
4. **Encourage sectoral burden-sharing to make everybody better off:** At the national level, an agreement on burden-sharing across sectors is also needed. This will require an update of national emergency plans that are inadequate to deal with a major or long-lasting gas shortage. Consumers are often identified as a protected user group, leaves industry as the main sector to bear the brunt of rationing (see Figure 4), even as the share of employment at risk in the most gas-reliant industries stands at more than 15% in Eastern Europe and Germany (see Figure 5). In fact, household gas consumption offers significant savings potential: For Germany, we calculate that for every 1pp reduction in household gas consumption, gross value added to the tune of EUR2.5bn and up to 25,000 jobs could be protected in manufacturing – not accounting for positive second-round effects. Hence, to limit the economic fallout, the burden of rationing should be spread widely.

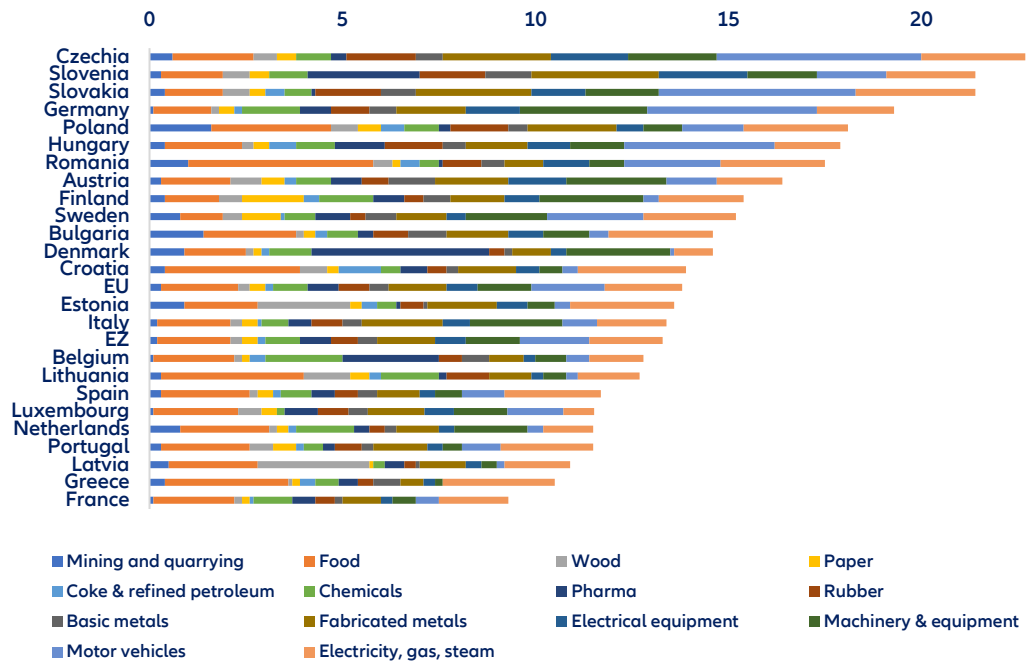
⁵ See our report [The \(energy\) price of war for European households](#).

Figure 3: Share of Russian gas in total primary energy use (%) vs. gross value added at risk (% total)



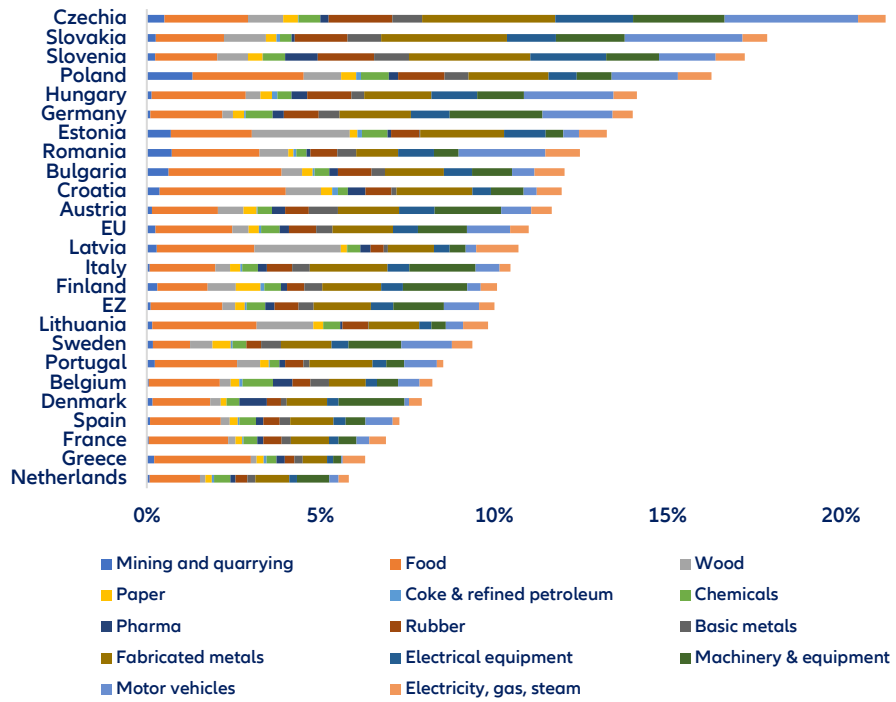
Sources: Eurostat, Allianz Research

Figure 4: Gross value added at risk (% total)



Sources: Eurostat, Allianz Research

Figure 5: Employment at risk (% total)



Sources: Eurostat, Allianz Research

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