

China's post-zero-Covid rebound⁸

Im Jahr 2022 ist die chinesische Wirtschaft mit nur 3% Wachstum ungewöhnlich langsam expandiert. Auch aufgrund der Lockerungen der Null-Covid-Politik wird für 2023 mit einem deutlichen Anstieg auf 5,2% gerechnet. In dieser Kurzanalyse verwenden wir das ‚Global Economic Model‘ von Oxford Economics, um die Auswirkungen dieser Wachstumsbeschleunigung auf den Euroraum und die globale Wirtschaft zu erörtern.

Basierend auf dieser Analyse rechnen wir für 2023 mit einem Anstieg des Wachstums im Euroraum um moderate 0,1 Prozentpunkte und global um 0,5 Prozentpunkte. Die Inflation steigt in der Eurozone um 0,3 Prozentpunkte und global um 0,4 Prozentpunkte. Der Anstieg in der Inflation wird dabei hauptsächlich durch höhere Energiepreise getrieben, ausgelöst durch den höheren Energiebedarf aus China. Der Wachstumsschub ist getrieben durch die erhöhte Nachfrage aus China nach den Produkten aus anderen Ländern.

Introduction

One of the most debated economic events at the end of last year was the surprising decision in China to considerably lift the Covid19-restrictions which were until then one of the strictest, if not the strictest, around the globe. Until then China followed a zero-Covid policy that reacted to even minor outbreaks of Covid19 with very strict lockdowns. This policy also affected many production lines and thus contributed to the lowest growth rate in China for several decades, with real GDP growing by only 3% against the target of 5.5%.

With China being an important growth-engine for the world economy, this had negative effects for global growth. But it also had the beneficial side effect that Chinese demand for energy and commodities turned out lower than it would have been otherwise. This was especially welcome in Europe which suffered from soaring energy prices in the wake of the Russian war in Ukraine. So, while the reopening in China was welcomed amid fears of a global recession, it also sparked the worry that it might lead to rising commodity and energy prices and thus lead to a resurgence of the energy crisis in Europe. In this note we use the Global Economic Model of Oxford Economics to analyze the effects of the China rebound on energy prices and inflation in Europe.

The **Global Economic Model of Oxford Economics** is a large and complex model of the world economy that is used by many private firms and international institutions, including the IMF, the ECB and the Bundesbank. It includes detailed country-model blocks for 85 countries, including all the countries in the euro area. The country models typically feature more than 300 variables, including, of course, all the relevant aggregate variables, like GDP, private consumption, private investment, public expenditure, employment, and wages. The model also features nominal price rigidities and thus real effects of monetary policy.

The individual country model blocks are linked via trade flows, capital flows and international prices, including exchange rates and commodity prices, like the ones for oil, coal and gas. This makes the model ideal for studying the international spillover effects of domestic policies and economic developments. The equations of the model are estimated in error-correction form, specifying a long-run relationship between variables, as well as the short-run adjustment towards the long-run equilibrium.

⁸ Autor:innen: Clara De Luigi and Wolfgang Lechthaler (Referat International Economics).

Baseline scenario

To calibrate the simulations, we rely on the projections for GDP growth in the IMF's most recent World Economic Outlook (WEO). The IMF projects **China's GDP growth** to reach **5.2% in 2023, 4.5% in 2024 and 4.1% in 2025**. Using the 3% GDP growth in 2022 as a baseline, we thus simulate an increase in Chinese growth by 2.2ppt in 2023, 1.5ppt in 2024 and 1.1ppt in 2025.

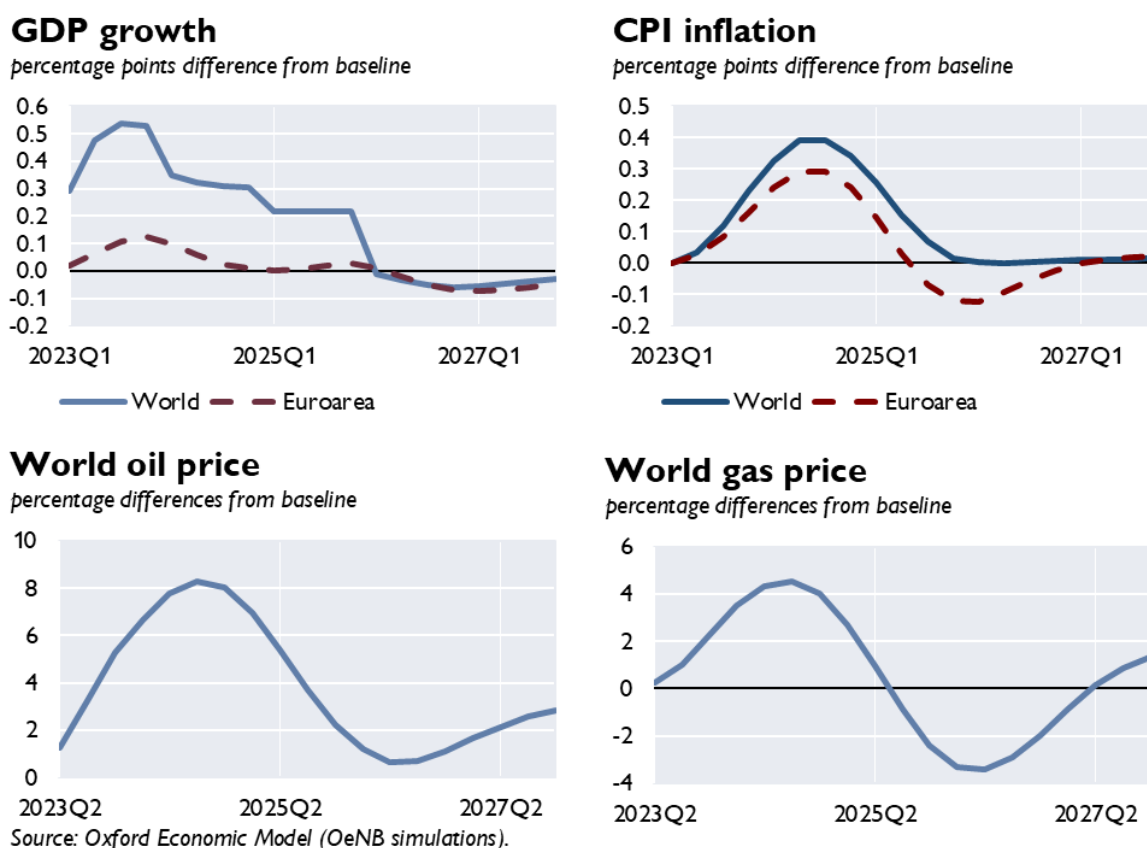


Figure 1: Top panels: Effects of the China rebound on world and euro area growth and inflation (ppt deviation from baseline). Lower panels: Effect of China rebound on World oil and gas prices (percentage difference from baseline). Baseline scenario: IMF April forecast vs China pre-reopening 2022 growth. Effects on global variables are represented by the blue solid lines, while effects on EA measures are illustrated by the purple dashed lines.

For **China's domestic variables**, such an increase in GDP growth would lead to an increase in domestic consumption by about 2.6% in the first year, and another 1.8% in the second year, while investment grows by 4.5% at the peak in Q2.2023 before slowing down to 2.7% growth in 2024 (always relative to the baseline of 3% growth). Inflation is projected to increase by 0.5 ppt at the peak in Q1.2024.

The projected increase in growth in China has noticeable **effects for growth in the world economy and Europe** (see **Figure 1**). According to our simulations, growth in world GDP would increase by almost 0.5ppt in 2023 and 0.3ppt in 2024. For Europe this effect would be considerably smaller with just above 0.1ppt in 2023. This effect is primarily driven by European exports which increase by 0.3%, while private investment increases by half as much and private consumption stays flat. Although China is the single most import trading partner for Europe, most of its international trade is internal trade, i.e., trade within the euro area (for most countries the share of internal trade lies between 50% and 75%). In contrast, many East-Asian countries rely

more heavily on Chinese demand. Furthermore, it should be noted that China is an important part of the world economy and thus has a direct impact on world GDP.

Much larger are the **effects on energy prices**, confirming the concern stated in the introduction. The results are presented in the two lower panels in **Figure 1**. The China rebound has a noticeable positive impact on the world oil price, with its peak-effect at the second half of 2024: the oil price per barrel is about 6.5\$ or 8.3% higher than if growth in China remained as high as in 2022. Likewise, the world gas price is about 4.5% higher. Still, the **effects on euro area inflation** are relatively mild: at the peak in the middle of 2024 inflation is around 0.3 percentage points higher in the euro area (see **Figure 1**).

Counterfactual simulations

Having discussed our baseline scenario, we now consider various alternative scenarios. This helps identifying the possible drivers of the effects of the China rebound on the world and euro area economy.

First, we analyze the role of China's commodity demand by shutting off its effect on oil and gas prices. Second, we analyze the role of Chinese imports. Third, in order to test the robustness of the results based on different growth forecasts for China, we illustrate the effects, using alternative growth projections by other institutions. Finally, we present the result for a shock to China's growth normalized to one percentage point.

Fix energy prices

In our first alternative scenario, we assume that the oil and gas prices are not affected by the increase in Chinese growth. This exercise helps to disentangle the direct effect of growth in China from the indirect effect via energy prices. Technically, we implement this by complementing the growth shock by an oil price shock that assures that the oil price is the same as in the baseline scenario without growth shock. The results are illustrated in the graphs below.

In the scenario without change in energy prices the movement in inflation is much smaller both for the euro area and for the world economy. For the euro zone at the peak the effect on inflation is only a third of the effect in the baseline scenario. GDP in the euro zone and the world economy also expand more strongly in the scenario without energy price changes. As expected, the increase in oil and gas prices is dampening economic activity. For the euro area this effect is quite substantial implying a weaker and less persistent increase in GDP growth. For world GDP the effect appears minor, but that is also due to the generally higher growth rate in the world economy.

Fix Chinese demand for imports

In a second alternative scenario we analyze the role of the increased import demand stemming from the rebound in China. In analogy to our fixed oil price scenario, we thus assume that China's imports do not differ from our baseline scenario with 3% GDP growth. The results are illustrated in **Figure 2** below. In this scenario the increase in inflation is also considerably lower than in the baseline scenario, but the difference is much smaller than in the oil-price-scenario. Thus, while the increase in external demand from China is pushing up inflation in the euro area and the world alike, the effect of increased energy demand is quantitatively much more important.

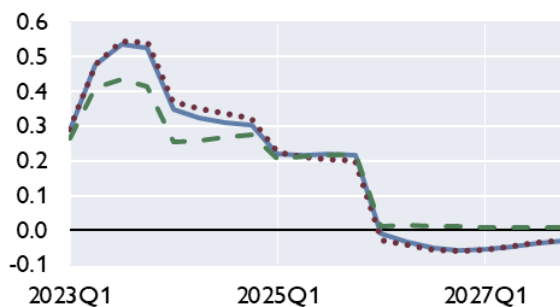
In contrast, the effects on GDP growth are more substantial in the fixed-import-scenario and furthermore point in opposite direction than the oil-price-scenario. In the absence of the increase in Chinese imports, GDP growth would be about 0.1 ppts lower in 2023 compared to the IMF

baseline scenario. For the euro area the effects are starker, with GDP growth declining even compared to 3% growth (pre-reopening) scenario. Thus, if it wasn't for the increase in Chinese imports the effects of the China rebound would actually be negative for growth in the euro area.

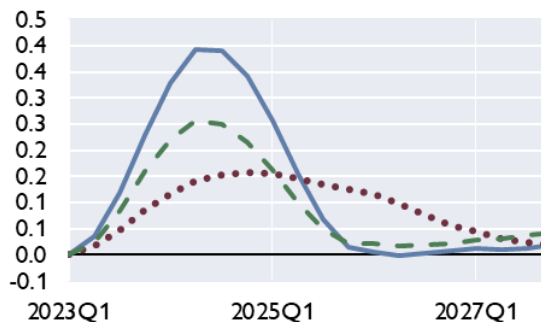
Effects according to different counterfactual simulations

percentage points difference from baseline (China 3% growth)

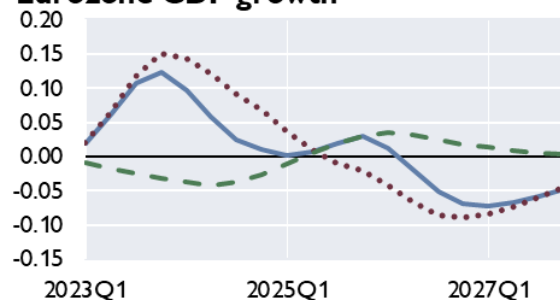
World GDP growth



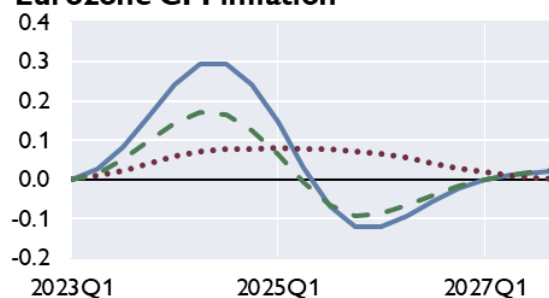
World CPI inflation



Eurozone GDP growth



Eurozone CPI inflation



— IMF scenario fix oil price - - - fix imports

Source: Oxford Economic model (OeNB simulations).

Figure 2: Counterfactual simulations: Role of oil prices and imports for world and euro area growth and inflation. Percentage point deviations from pre-opening (3% growth) baseline. The IMF scenario is represented by the blue solid line, while the purple dotted line and the green dashed line are alternative scenarios where the oil price and China's imports, respectively, remain fixed after the shock to Chinese GDP growth.

China's growth acceleration normalized to 1 percentage point

The results above have to be interpreted with care. Our simulations report the results relative to a baseline of 3% growth in China, which was its growth rate in 2022. So, our results illustrate the effects of a surge in Chinese growth starting from an unusually low base (when it comes to Chinese growth). This is, however, not the effect of China's departure from its strict zero-Covid policy, since even in the absence of this departure a growth acceleration would have been expected, albeit a milder one.

To help interpreting the results we thus illustrate in **Figure 3** below the effects of an increase in Chinese growth in 2023 and 2024 that is normalized to 1 ppt. Since the effects are roughly linear for such relatively small shocks, they are scalable, meaning that a 2 percentage points increase in growth would roughly yield twice the effect.

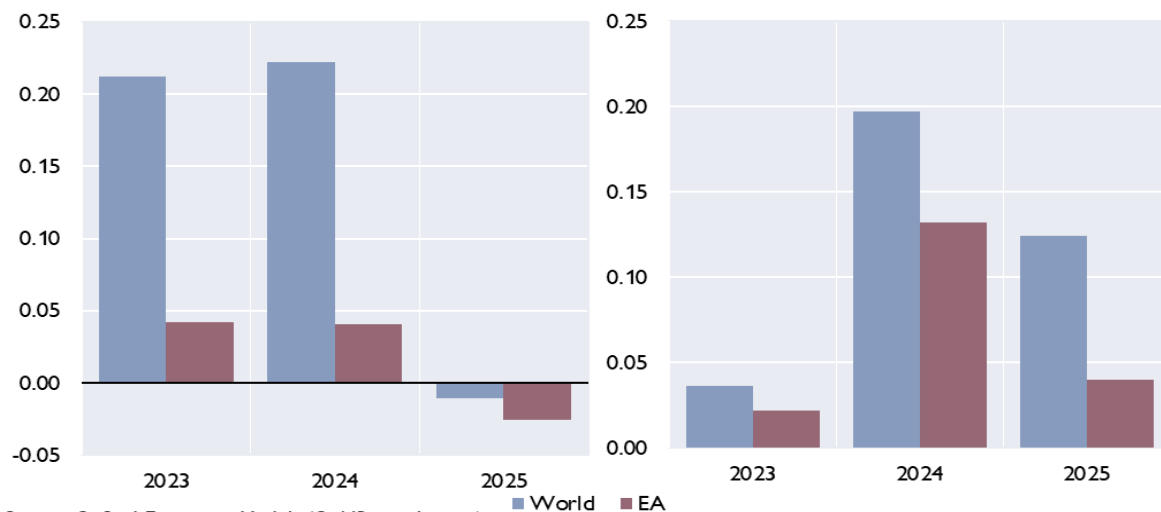
Estimates for the isolated effect of releasing Covid-related restrictions are also around 1ppt additional growth for 2023 and 2024. Thus, the results could also be interpreted as the effects of

abandoning zero-Covid policy. Our results are broadly comparable to ECB staff's simulations presented in the March 2023 Projections.⁹

Effects of 1ppt increase in China growth

percentage points deviations from baseline

GDP growth



Source: Oxford Economic Model (OeNB simulations).

Figure 3: Effects of a 1 ppt increase in Chinese growth on World and EA growth and inflation. Percentage point deviations from baseline.

Conclusions

We have used the Global Economic Model of Oxford Economics to analyze the effects of a rebound in Chinese growth on energy prices, inflation and GDP growth in Europe and globally. We find that the **effects on inflation** are not huge, but also not negligible, with the peak effect in **euro area** around **0.3ppt** and **globally** around **0.4ppt**. The effect on GDP growth is around 0.12ppt for euro area and 0.5ppt globally.

The effects on inflation are **primarily driven through energy price inflation**. The China rebound raises oil and gas prices by 8.3% and 4.5%, respectively, and thus explain roughly 2/3 of its effect on inflation in the euro area. **More relevant for growth is the increase in Chinese demand for foreign goods**. Without this increase, the China rebound would actually lower growth in the euro area compared to the pre-reopening scenario.

⁹ Using ECB-BASE model, the ECB staff estimates the effects of a stronger rebound in the Chinese economy (additional 1.1ppt increase in China's GDP growth in 2023) will lead to approximately 0.1ppt increase in EA GDP growth and 0.2ppt increase in EA inflation in 2023. For more details see [ECB staff macroeconomic projections for the euro area, March 2023 \(europa.eu\)](https://www.ecb.europa.eu/press/pr/2023/03/20230301_en.html), Box 3.