Box I.4.2: Technical assumption on the future trading relations between the EU and the UK and model simulation of their economic impact

The UK left the EU on 31 January 2020 and entered into a transition period, during which EU law, with a few exceptions, continues to apply to and in the UK. After the end of the transition period on 31 December 2020, whatever the result of the ongoing negotiations, it is clear that trade between the EU and UK will no longer be frictionless since UK intends to leave the Single Market and Customs Union. As such, the technical assumption of unchanged trading relations that has been used in previous forecast rounds is no longer appropriate. The new technical assumption used in this forecast is that the EU and the UK trade on WTO Most Favoured Nation (MFN) rules ('WTO assumption') from 1 January 2021 onwards. This is the default assumption if no agreement on future trading relations between the EU and the UK is concluded before the end of the transition period and is in line with the general 'no-policy-change' assumption routinely used in the Commission's forecasts. This is without prejudice to the outcome of the ongoing negotiations. The possible conclusion of an agreement on a partnership, including a Free Trade Agreement (FTA), would improve the outlook compared to the baseline.

Under the WTO assumption, the trading relationship between the EU and the UK will be significantly less beneficial than the current situation. While tariffs between the EU and the UK are currently zero, the assumption involves the imposition of tariffs at respective MFN levels in line with the EU's WTO obligations. In addition, as in any scenario, non-tariff barriers (NTBs) related e.g. to customs and regulatory compliance will increase substantially due to the UK and the EU being in different legal, fiscal and regulatory spaces [1]. It is assumed that there will be initial disruptions in trade in the first quarter of 2021.

A modelling simulation was carried out to estimate the effect of the switch from the unchanged trading relations assumption to the WTO assumption, which was used as input for the individual country forecasts. Since this situation is unprecedented, the estimates are subject to a high degree of uncertainty.

The simulation focuses on the short-term impact of the interruption in trade flows. It does not include effects of potential longer-term changes in productivity nor of possible changes to migration flows. The forecast uses technical assumptions for exchange and interest rates, among others (see Box I.4.1) and hence the assessment does not look into any potential impact through the financial sector and the exchange rate channels.

The Model

A static model is used to estimate the short-term impact of the UK leaving the EU acquis, including the Single Market and Customs Union [2]. By construction, it does not account for changes in behaviour and therefore does not factor in any dynamic adjustment, such as for example trade diversion. The model is based on the global input-output tables published by the OECD [3]. These provide data on domestic transaction flows of goods and services across industries, as well as flows of goods and services between countries. The approach thus takes into account both supply chains and final demand. To assess the impact of the new trading assumption, a trade shock is estimated, based on the assumptions on tariffs, NTBs and trade elasticities as described below. This trade shock is then fed into the model as a decrease in the current trade flow to assess the impact on production and value added.

Assumption and data used

The UK leaving the Single Market and the Customs Union and all EU international trade agreements will significantly increase the costs of trade between the EU and the UK. Tariffs between the EU and the UK will increase from zero to their respective MFN levels. EU MFN tariffs are computed with detailed actual tariff collection data based on EU imports from MFN partners (3.6% average, trade-weighted at sectoral level), while data for the UK are based on the UK's MFN tariffs ('UK Global Tariff') as published by the British government in May 2020 (5.3% average, trade-weighted at sectoral level). The tariff equivalent of

[1] Union rules relating to goods and the Union Customs Code will continue to apply to and in Northern Ireland.

[2] The UK also leaves the VAT and excise area, and loses access to the EU's international trade agreements, among others.

[3] www.oecd.org/sti/ind/inter-country-input-output-tables.htm, released in December 2018, latest data from 2015.

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Box (continued)

the increase in NTBs resulting from the WTO assumption is estimated at sector level based on the Commission's internal assessment. In the model used, they amount to 12.7% and 10.1% on average (trade-weighted at sectoral level) for EU and UK imports, respectively.

Tariffs are applied fully from the first quarter of 2021. For the purpose of modelling, part of the effects of NTBs are applied from the beginning, with the remainder gradually phasing in over time [4]. The simulation assumes initial additional temporary disruptions in the first quarter of 2021, as economic actors need to adjust to the new trading relations between the EU and the UK.

The trade elasticities used in the model are based on the average sectoral trade substitution elasticity estimates used in the Global Trade Analysis Project (GTAP) model of trade and taken from Hertel and van der Mensbrugghe (2016) [5]. As these come from long-run estimates, additional assumptions on the speed of adjustment towards the long-run are included in the model to account for the fact that value chains and trade patterns take time to adjust. The model accounts for the fact that the UK has rolled over many of the EU's existing FTAs with 3rd countries, but it assumes, in line with the no-policy-change assumption, that the UK does not sign any new FTAs over the forecast horizon.

The simulation uses data that do not take into account the impact of the COVID-19 pandemic. First studies on the UK and Ireland suggest that the sectors most affected by the pandemic (such as hospitality and tourism) are not those expected to be most affected by the UK's departure [6], but it is too early to provide a clear quantitative assessment.

Results

Compared to the baseline of unchanged trading relations, the move to the WTO assumption is estimated to lead to a GDP loss of around ¾% for the EU and euro area by the end of 2022, and to a loss of some 3% for the UK, with the increase in NTBs having a higher impact than tariffs. In line with published studies, the simulation finds that the loss as percentage of GDP is much higher for the UK than for the EU. However, within the EU, Member States with strong trade ties to the UK are expected to experience a non-negligible GDP loss.

The simulation result represents the expected loss resulting from new trade barriers, but it is not the overall cost of the UK withdrawing from the EU. Several published studies suggest that the UK economy has already been negatively impacted by the decision to leave the EU during recent years, even under unchanged trading relations. Studies suggest that by 2019, UK GDP was between 1.7% and 2.9% smaller than it would have been otherwise [7].

The static model focuses on the short term. In the medium and long run, dynamic adjustment will become more important, as economic actors dealing with the new trade barriers between the EU and the UK will adjust their production and supply chains over time. Due to the much larger market of the EU with a population of 440 million and a GDP of about EUR 14 trillion, adjustment for EU actors will likely be easier. Published long-term studies suggest that the gap between the GDP loss in the UK and the EU may increase in the long run [8].

[4] While many NTBs such as customs checks or the need for certificates to prove compliance with EU standards will apply from 1 January 2021, others will only come into play at a later stage (e.g. the impact of a potential divergence between EU and UK standards).

[5] Hertel, T. and D. van der Mensbrugghe (2016). "Chapter 14: Behavioral Parameters (Center for Global Trade Analysis)". Purdue University, West Lafayette, In Global Trade Analysis Project (GTAP).

[6] See: Daly, L. and M. Lawless (2020). "Examination of the sectoral overlap of COVID-19 and Brexit shocks". Economic and Social Research Institute Working Paper 677; De Lyon, J. and S. Dhingra (2020). "Covid-19 and Brexit, Real-time updates on business performance in the United Kingdom". Centre for Economic Performance COVID-19 Analysis Paper 006.

[7] See Born, B., G. J. Mueller, M. Schularick and P. Sedlacek (2019). "The Costs of Economic Nationalism: Evidence from the Brexit Experiment". *The Economic Journal*, 129 (623), pp. 2722-2744; Springford, J. (2019). "The Cost of Brexit to June 2019". Centre for European Reform Insight.

[8] See for instance Bevington, M., H. Huang, A. Menon, J. Portes, J. Rutter and T. Sampson (2019). "The economic impact of Boris Johnson's Brexit proposals". Centre for Economic Performance Brexit Analysis; International Monetary Fund (IMF) (2019). "A No-deal Brexit." In IMF *World Economic Outlook: Growth Slowdown, Precarious Recovery*. Washington D.C: IMF, April; and for an overview of studies: European Central Bank Eurosystem – International Relations Committee Brexit Taskforce (2020). "A review of economic analyses on the potential impact of Brexit". Occasional Paper Series 249.