Completing the single market for goods

SUMMARY

The pandemic and the negotiations following Brexit have been a serious challenge for the integrity of the single market, in particular regarding free movement. Growing world tensions and the military aggression against Ukraine by the Russian Federation are now further emphasising the benefits of unity between Member States. Faced with this extremely difficult environment, the EU has responded with unprecedented determination, developing a series of tools and coordination mechanisms, such as common procurement and fiscal support, to rapidly address weaknesses.

As the situation remains uncertain and as risks accumulate, continued common action and long-term strategic planning at EU level is required more than ever to significantly reduce harmful dependencies. Previous evaluations by EPRS stressed that the single market for goods could be instrumental in this respect. In this briefing, our updated simulations confirm that the untapped potential from the single market for goods is still substantial.

In particular, as barriers to trade facilitation and complexity of regulatory procedures continue to hinder the free movement of goods, further action in this area could significantly boost intra-EU trade, with potential economic benefits of between €228 billion and €372 billion per annum. We therefore conclude that completing the single market for goods is an integral part of the path towards more strategic autonomy, more resilience, more security, and more rapid, broad-based and sustainable development.

Figure 1. Intra-EU trade in goods – openness (extrapolated trend, as a % of GDP)

Source: European Added Value Unit, EPRS.
Background

In addition to the tragic loss of human lives, the Covid-19 pandemic has severely disrupted the production and distribution of goods at internal and global levels. Growing world tensions and the military aggression against Ukraine by the Russian Federation are now further emphasising the benefits of unity between Member States. Faced with this extremely difficult environment, the EU has responded with unprecedented determination, developing a series of tools and coordination mechanisms, such as common procurement or fiscal support, to rapidly address potential weaknesses.

The medium- and long-term consequences of these shocks still have to fully materialise, however. In particular, the disruption of supply and the reorganisation of some supply chains affect entire sectors, creating shortages of certain components, delays in delivering output and, more worryingly, persistent inflationary pressure. These disruptive events could, in turn, have serious consequences on public finances, particularly in vulnerable Member States, on financial stability, on investment decisions, on competitiveness and on trade.

Common action at EU level is therefore required more than ever, as well as reinforced, coordinated long-term strategic planning. In particular, there is a need to evaluate and swiftly remove measures that could lead to persistent distortions in the single market for goods. A comprehensive review of the fragility in some supply chains has already started. This should be systematised, and proactive management of supply chains and contingency plans should be developed, should a new pandemic occur. Furthermore, a culture of preparedness should be developed and partnership should be reinforced at all levels, while enforcement should continue to be improved.

There is also a risk of failure to reap some of the benefits offered by the single market, if heavy, multi-layered administrative burdens and barriers continue to affect business operations. A fully complete and well-functioning single market for goods will also require accelerated progress on simplified and fair taxation and digitalisation. In that respect, the European Semester – which is supposed to provide a framework for the coordination of economic policies across the European Union – would need serious rethinking, upgrading and updating.

European Parliament position

The Parliament has been one of the most consistent advocates for completing the single market and has been central in developing the rationale and sustaining political momentum towards this goal. It is involved in the enactment of key pieces of single market legislation to constantly bring the single market for goods up to date with the ongoing transformations. Following up on an earlier resolution from 2016, in February 2022 the Parliament approved a comprehensive report on tackling non-tariff and non-tax barriers in the single market. It outlined that the single market’s shortcomings deserve the same level of attention as the Green Deal and the digital agenda, calling for the removal of unjustified barriers across the EU.

The Parliament also addressed the impact of the Covid-19 pandemic on the single market, stressing the 'serious impact' this has had on the free cross-border movement of goods, persons and services and pointing out that some of the effects may be temporary, but that others will have lasting consequences. Finally, the Parliament welcomed the Commission's proposal to present a single market emergency instrument, which should be a legally binding structural tool to ensure the free movement of persons, goods and services in case of future crises.

European Commission and Council response so far

In May 2019, the Competitiveness Council called on the Commission to complete the assessment of the remaining regulatory and non-regulatory obstacles and opportunities within the single market. The Commission recognised these challenges in the single market governance package of March.
2020, which, in a series of publications, provides evidence on administrative inefficiencies and regulatory barriers still faced by EU businesses and consumers.

Against the backdrop of the Covid-19 pandemic, in September 2020 the Council also adopted conclusions on how to deepen the EU single market for a strong recovery and a competitive, sustainable Europe. The Commission updated its communication on a new EU industrial strategy in May 2021, which reaffirmed the priorities of 2020 and presented new measures for a stronger single market, especially in times of crisis. The Commission also published a single market report in May 2021 which analysed the impact of the crisis on the single market.

In April 2021, the Council and Parliament adopted the EU's single market programme for 2021-2027, with a total budget of €4.2 billion, to help the single market achieve its full potential and ensure Europe's recovery from the Covid-19 pandemic.

Barriers to the completion of the single market for goods

Previous ex-ante research carried out in 2014 by the European Added Value Unit of EPRS for the European Parliament's Committee on the Internal Market and Consumer Protection (IMCO) concluded that removing these obstacles and completing the single market for goods could still boost intra-EU trade. It was subsequently estimated that this could generate between €183 billion and €269 billion per annum in additional gains for the EU economy.

A series of comprehensive studies have recently confirmed that the single market for goods is one of the greatest achievements of the European integration process, benefiting millions of businesses and consumers on a daily basis. Since its adoption in 1993, the single market for goods has already addressed 80% of regulatory barriers prevailing at the time through the adoption of common rules, which focus on harmonisation of legislation. The deficit in transposing EU directives has also decreased considerably. As a result, intra-EU trade in goods grew significantly, from a value of 14% in 1992 to around 22% in 2021 (see Figure 1). The most recent estimations conclude that this has helped to substantially increase employment and that it has boosted EU GDP by between 3.1% and 6.2% on average, depending on the scope of the analysis and on the model used. Furthermore, the single market for goods has had a positive impact on investment as more competitive and better integrated EU value chains have developed. Finally, the single market has helped to reduce the gender earnings gap by boosting employment opportunities for women.

Despite the already high level of integration, some analyses emphasise that single market rules continue to need better implementation and enforcement, as the ratio of directives that have not been correctly transposed has never been as high as in 2020, and as the number of single market-related infringements has risen further to 837 pending cases (+5% compared to 2019), one of its highest levels in the past 10 years. High administrative complexity, excessive national requirements, unharmonised labelling standards and other remaining obstacles to trade at various levels still seem to have a negative effect on intra-EU trade. A study by the ECB in 2017 estimated that the home bias was indeed substantial, as the average EU Member State trades 45 times more within its borders than it does across intra-EU borders. Identifying these remaining obstacles to the single market and areas where the single market needs further deepening and strengthening is extremely relevant, as evidence shows that a strong, thriving and open single market is most likely to offer the best prospect for a sustainable European economic recovery.

As recalled by the European Commission, existing business surveys stress that there is room for convergence towards best practices as, for instance, 69.3% of entrepreneurs still replied ‘No’ to the question ‘Is the single market sufficiently integrated, allowing your company to operate and compete freely?’.

A recent business survey by Eurochambres provides an interesting overview of the relative importance of individual challenges that need to be addressed so that the single market for goods delivers its full potential (see Figure 2). The survey emphasises that there is a need for credible
simplification by tackling excessive red tape and reducing complexity at all levels. More specifically, legal uncertainty and complexity when doing cross-border trade, detailed technical requirements and the multiplication of procedures in some areas continue to prevent the principle of mutual recognition from reaching its full potential. Additional administrative burdens are also caused by the tendency of some Member States to combine the transposition of EU legislation with the revision of related internal legislation ('gold plating'). As a result, according to the study, complex administrative procedures remain the largest obstacle to doing cross-border business in the single market (79.5% of businesses rate it as a significant or extremely significant obstacle).

Figure 2. Main single market obstacles


There is also a need for better enforcement and harmonisation (67.4% of businesses identify different national rules as a significant or extremely significant obstacle). Despite noticeable progress, the adoption of harmonised rules in Member States’ national legal frameworks could still face delays, and infringements sometimes hamper further integration. For businesses operating within non-harmonised sectors (representing around 20% of the total goods market), the principle of mutual recognition should be applied more extensively. Finally, prevention of unfair competition from non-compliant products should continue to be strengthened, as a growing number of products are not in compliance with the applicable EU legislation on industrial products.

There is also a need to address administrative ineffectiveness, notably through faster adoption of digital technologies, effective one-stop shops and general digitalisation of information as, in practice, many businesses are not fully aware of the principle of mutual recognition and thus do not take advantage of all the possibilities at their disposal (67.1% of businesses complain about the inaccessibility of information on rules and requirements). Instruments for resolving disputes and ensuring compliance should continue to be improved, taking into account the ongoing digitalisation of the economy.

These elements are naturally self-reinforcing and, for an optimal result, they need to be addressed through a systemic approach rather than through independent and sometimes unrelated tools.
Completing the single market for goods

Estimating the economic impact of completing the single market for goods

In this part, we present an update of the results of the 2014 Cost of Non-Europe (CONE) publication on the free movement of goods using more recent data and considering progress made in facilitating cross-border trade and improving the governance of the single market. With a focus on the free movement of goods, we further investigate the trade distortion effects of existing barriers to trade and the potential untapped economic potential that could accrue when addressing these barriers.

Conceptual framework and description of data used

To evaluate the impact of remaining barriers to the single market for goods, we rely upon the same gravity model specification as in the 2014 CONE study. Gravity models are well known and are extensively used in the trade literature. This approach has several advantages from the perspective of policy analysis, as the model can be extended to look at the economic impact of regulatory barriers and of various institutional arrangements.

A limitation of gravity models is that they mostly focus on the impact on trade volumes. They thus do not pretend to have the higher level of explanatory power of more complex models such as general equilibrium models. The gravity models used in this briefing also do not allow for disaggregated estimations of impact on consumers or on certain types of businesses and stakeholders. The results are nevertheless easier to interpret and understand.

Finally, it is important to remember that, while the variables in our model are the most commonly used in similar types of analysis, and in particular in the 2014 CONE study, there are variables that have been kept out of the scope of our analysis as we deemed them less relevant or as they proved not to be significant during various rounds of estimation. Equation (1) reflects the baseline gravity model, relating bilateral trade flows with GDP from both the exporting and importing country, trade costs and policy indicators representing the regulatory barriers in the importing country and its effects on bilateral exports.

\[ \log X_{ij} = \beta_0 \log GDP_i + \beta_1 \log GDP_j + \beta_2 \text{contiguity}_{i,j} + \beta_3 \log \text{distance}_{i,j} + \beta_k \text{regulatory barriers}_{i,j} \] (1)

More specifically, \( X_{ij} \) represents the total export of goods flows in billion euros between exporting country \( i \) and partner country \( j \), and GDP represents GDP figures in billion euros for each country. We use 2019 data for annual GDP and bilateral trade flows between any pair of countries from Eurostat. The variable contiguity is an indicator equal to one if countries share a common land border and zero otherwise, and distance is the geographical distance between the capitals of countries \( i \) and \( j \). The data have been extracted from the CEPII GeoDist dataset and reflect the well-documented hypotheses that transport costs increase with distance and are lower for neighbouring countries.

Finally, to measure regulatory barriers at country level, we use the latest update of the OECD indicators of product market regulation, a comprehensive and internationally-comparable set of indicators on economy-wide regulatory and market environments. More specifically, and in line with the approach followed in the 2014 CONE study, we use indicators that measure the incidence of regulatory barriers on trade via excessive complexity of procedures, barriers to trade facilitation, distortion induced by state involvement, barriers to foreign direct investment, state involvement in business operations and administrative burdens on start-ups. The numerical values represent stringency of policy in each area, from 0 (absence of significant regulatory barriers) to 6 (most restrictive regime).
Table 1 gives descriptive statistics for the variables used in the econometric model. The expected signs of the impact on exports of goods for each variable is given in brackets.

Table 1. Description of selected regulatory barriers variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Unit</th>
<th>Original source</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity of regulatory procedures (-)</td>
<td>index</td>
<td>OECD PMR</td>
<td>0.9</td>
<td>0.8</td>
<td>0</td>
<td>2.5</td>
</tr>
<tr>
<td>Barriers to trade facilitation (-)</td>
<td>index</td>
<td>OECD PMR</td>
<td>0.8</td>
<td>0.3</td>
<td>0.3</td>
<td>1.3</td>
</tr>
<tr>
<td>Distortions induced by state involvement – scope of SOEs (-)</td>
<td>index</td>
<td>OECD PMR</td>
<td>3.1</td>
<td>0.9</td>
<td>1.4</td>
<td>5.4</td>
</tr>
<tr>
<td>Barriers to foreign direct investment (-)</td>
<td>index</td>
<td>OECD PMR</td>
<td>0.2</td>
<td>0.1</td>
<td>0</td>
<td>0.6</td>
</tr>
<tr>
<td>Extent of command and control regulation (-)</td>
<td>index</td>
<td>OECD PMR</td>
<td>1.3</td>
<td>0.4</td>
<td>0.4</td>
<td>2</td>
</tr>
<tr>
<td>Administrative burden on start-ups - licence and permits (-)</td>
<td>index</td>
<td>OECD PMR</td>
<td>1.5</td>
<td>1.3</td>
<td>0</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Source: European Added Value Unit, EPRS.

The statistics suggest that, largely thanks to the single market, remaining barriers to foreign direct investment within the EU play a relatively smaller role regarding regulatory stringency (the mean is 0.2, while the maximum value is only 0.6). The statistics, however, reveal room for significant improvement regarding the distortions induced by state involvement (the mean value is still at 3.1). The statistics also underline the large untapped potential for further action and for convergence between Member States, in particular in areas such as administrative burdens on start-ups (standard deviation of 1.3 and mean value of 1.5) and complexity of regulatory procedures (standard deviation of 0.8 and mean value of 0.9). Progress on addressing barriers to trade facilitation should be pursued (mean value of 0.8), but past actions have borne some fruit as Member States have converged significantly (standard deviation of 0.3).

Results of the estimation

In this first stage of the analysis, we estimate the parameters of the gravity model that capture the trade patterns of the 27 EU Member States and their ‘pair’ EU trading partners. The parameters of this model are then subsequently used in a second step to generate a prediction of what benefits in terms of increased trade flows would accrue for the Member States, if trade barriers within the internal market were to be reduced. The results are provided in Table 2.

Specification (1) shows a basic gravity model in which only GDP and transportation costs variables are included. The explanatory variables all display the expected signs and significant coefficients. This remains true in all specifications subsequently estimated, emphasising the strength of the gravity model framework. The GDP of exporting (i) and importing (j) countries has a positive impact on trade. The fact that two countries share a common border also has a positive effect, while the larger the distance between two countries, the smaller the level of recorded trade flows, as expected.

Specifications (2) to (6) progressively include regulatory variables in the model. Specification (2) shows that distortions induced by state involvement and barriers to trade facilitation have a significant negative impact on trade flows. Here it is worth noting that the focus is on distortions induced by state involvement rather than just on a more difficult-to-interpret variable on state involvement. We conclude here that the higher the disruption produced by state intervention and the higher the barriers to trade, the more limited the freedom to trade. This is in line with the results in the literature using this type of model.
Completing the single market for goods

Specification (3) goes further by emphasising the negative effect of complex regulatory procedures on trade flows. This is an interesting result since, as mentioned in the business survey, this factor is the main obstacle stressed by businesses as a hindrance to the full completion of the single market. More attention should therefore probably be paid to the fact that regulatory goals are achieved without increasing administrative burdens and related compliance costs for businesses.

Table 2. Econometric estimations (dependant variable is log of total bilateral export flows)

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log GDP country i (+)</td>
<td>0.996***</td>
<td>1.007***</td>
<td>1.007***</td>
<td>1.007***</td>
<td>1.008***</td>
<td>1.007***</td>
</tr>
<tr>
<td>Log GDP country j (+)</td>
<td>0.796***</td>
<td>0.832***</td>
<td>0.832***</td>
<td>0.831***</td>
<td>0.830***</td>
<td>0.834***</td>
</tr>
<tr>
<td>Contiguity (+)</td>
<td>0.239***</td>
<td>0.364**</td>
<td>0.372**</td>
<td>0.381**</td>
<td>0.377**</td>
<td>0.371**</td>
</tr>
<tr>
<td>Log distance (-)</td>
<td>-1.424**</td>
<td>-1.357***</td>
<td>-1.345***</td>
<td>-1.341***</td>
<td>-1.341***</td>
<td>-1.342***</td>
</tr>
<tr>
<td>Distortions</td>
<td>-</td>
<td>-0.169***</td>
<td>-0.174***</td>
<td>-0.171***</td>
<td>0.171***</td>
<td>0.176***</td>
</tr>
<tr>
<td>induced by state</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>involvement (-)</td>
<td></td>
<td>-0.259**</td>
<td>-0.276**</td>
<td>-0.267**</td>
<td>-0.265**</td>
<td>-0.263**</td>
</tr>
<tr>
<td>Barriers to trade</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>facilitation (-)</td>
<td></td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complexity of</td>
<td>-</td>
<td>-</td>
<td>-0.068*</td>
<td>-0.062*</td>
<td>-0.058*</td>
<td>-0.061*</td>
</tr>
<tr>
<td>regulatory procedures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barriers to foreign</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.111</td>
</tr>
<tr>
<td>direct investment (-)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent of</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-0.038</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>command and control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>regulation (-)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrative</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-0.021</td>
<td>-</td>
</tr>
<tr>
<td>burden on start-ups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R squared</td>
<td>87.4</td>
<td>87.9</td>
<td>88</td>
<td>88</td>
<td>88</td>
<td>88</td>
</tr>
</tbody>
</table>

Source: European Added Value Unit, EPRS. *** p<0.01, ** p<0.05, * p<0.2.

Specifications (4) and (5) look further at this issue and include indicators on the extent of command and control regulation and on administrative burdens on start-ups. Ceteris paribus, we do not find a significant impact, indicating that the effect is already captured by the other variables in the model. Specification (6) is the closest to the model estimated in the 2014 CONE study, with a variable on barriers to foreign investment. These updated results, however, do not find this variable to still have a significant impact on trade flows. This may be explained by improvements in this area since 2014, as explained in the previous section, as remaining barriers to foreign direct investment within the EU are limited and divergence between Member States has been largely reduced.

Untapped potential of completing the single market for goods

In this second stage of the analysis, we estimate more precisely what would be the impact on trade flows and GDP of a reduction of existing obstacles to free intra-EU trade. Based upon the results corresponding to specification (3) of the gravity model in Table 2, we estimate the additional exports
and the resulting increase in GDP, as done in the 2014 CONE study, for each Member State individually and for the EU as a whole. We assume a ten-year period for the projections (corresponding to 2022-2032) and consider two scenarios.

The first scenario is our main scenario. It assumes that the gaps with the best performers in terms of barriers to trade facilitation and complexity of regulatory procedures are reduced by 50 %. This corresponds to continued convergence of Member States towards best practices. It is a relatively ambitious scenario given the time horizon of our simulation. The second scenario (alternative scenario) is more ambitious but still realistic, as it considers that Member States will reduce the gaps with the best performers by 80 % for both variables in the next 10 years. The values for this second scenario could therefore be taken as an upper estimate of benefits for the period.

Figure 3 shows the results from the simulations for the main scenario for all Member States and for the EU as a whole. The estimates reflect the total potential gains in terms of additional exports that would accrue if the obstacles to intra-EU trade in goods were to be removed as indicated (removal of 50 % of the gap with the best performers). Under this scenario, we find that the total incremental amount of intra-EU exports that would derive from reducing the complexity of regulatory procedures is around €81 billion, whereas additional exports that would derive from reducing barriers to trade facilitation are around €147 billion. Ceteris paribus, this amounts to a total benefit of €228 billion per annum, representing 1.6 % of EU GDP. Under our alternative scenario (removal of 80 % of the gap with the best performers), the overall gains are naturally larger and a total benefit of €372 billion per annum could be expected in that case.

Figure 3 also illustrates the fact that the potential gains are not identical across Member States, as some benefit more from a general move towards removing obstacles to intra-EU trade. For instance, Slovakia, Czechia, the Netherlands, Belgium and Hungary all have the potential to increase their exports in the internal market by more than 1 % of GDP if the complexity of regulatory procedures in the EU is reduced by 50 %. 

Source: European Added Value Unit, EPRS.
Completing the single market for goods

Slovakia, Czechia, Austria, Slovenia, Luxembourg and Hungary have the potential to increase their exports in the internal market by more than 1.5% of GDP if barriers to trade facilitation in the EU are reduced by 50%. More generally, even if all Member States would benefit from the removal of obstacles to intra-EU trade of goods, we acknowledge that redistribution effects, regional and international implications and the impact on macro-economic imbalances are not covered in this study; they could be further investigated in future complementary studies. As we expect trade obstacles to be gradually removed over time, it is also worth recalling that these estimates should be seen as long-term effects. It is also important to stress that the gravity model gives partial equilibrium results with regard to bilateral trade and the corresponding direct impact on GDP. These are therefore not directly comparable with full general equilibrium estimates as sometimes provided in the literature. This also explains why innovation impacts, competition impacts, spillover due to increased trade flows, and other types of indirect effects are not reported.

To conclude, our findings update the results of previous studies on the untapped potential of the single market for goods. As barriers to trade facilitation and complexity of regulatory procedures continue to hinder the free movement of goods, we confirm that the benefits of further action in these areas remain substantial, representing between €228 billion and €372 billion of additional GDP per annum. We therefore stress that completing the single market for goods is an integral part of the path towards more strategic autonomy, more resilience, more security, and more rapid, broad-based and sustainable development.

MAIN REFERENCES

Dahlberg E. et al., Legal obstacles in Member States to Single Market rules, study requested by the IMCO Committee, European Parliament, November 2020.


ENDNOTES

1  This briefing presents an update of previous EPRS results, excluding the UK from the quantitative analysis and considering recent progress made in facilitating cross-border trade and improving the governance of the single market for goods.

2  The EU in this briefing refers to the EU-27.

3  On 10 March 2020, the Commission released a Communication on identifying and addressing barriers to the Single Market, a Commission Staff Working Document accompanying the Communication, and a Communication on a long term action plan for better implementation and enforcement of single market rules.

4  For a review, see Coronavirus and the cost of non-Europe, EPRS, 2020.

5  Currently, around 82% of products traded in the single market are subject to harmonised rules. The principle of mutual recognition applies to non-harmonised products and aspects of products which fall outside the scope of harmonisation legislation.

6  The transposition deficit shows the percentage of single market directives not yet completely notified to the Commission in relation to the total number of directives that should have been notified by the deadline.

7  See Brauer Schultz H., 25 years of the European Single Market – Study funded by the Danish Business Authority, 2018.

8  A value which is relatively similar to the ex-ante estimate by Cecchini et al. of potential general economic gains to be expected from the single market of between 4.25% and 6.5% of GDP.

9  See in ‘t Veld J., 2019; Carril-Caccia F. and Pavlova E., 2018.


13  For a description of this type of model and of potential applications, see Baier S. and Standaert S., Gravity Models and Empirical Trade, 2020.

14  We do not include variables that did not appear as less significant in the 2014 study.

15  These indicators have been widely used in a number of studies and their limitations are well known and heavily documented. See OECD, A detailed explanation of the methodology used to build the OECD PMR indicators, 2020.

16  We use ordinary least square estimations (OLS). The 2014 CONE study presented OLS and Poisson pseudo-maximum likelihood results, without major differences in the results.

17  The value for the best performers is computed as the first percentile of the values for each respective index. We correct for large potential outlying values, assuming a maximum potential impact in relation to the value of the percentile.

DISCLAIMER AND COPYRIGHT

This document is prepared for, and addressed to, the Members and staff of the European Parliament as background material to assist them in their parliamentary work. The content of the document is the sole responsibility of its author(s) and any opinions expressed herein should not be taken to represent an official position of the Parliament.

Reproduction and translation for non-commercial purposes are authorised, provided the source is acknowledged and the European Parliament is given prior notice and sent a copy.

eprs@ep.europa.eu (contact)
www.eprs.eu (intranet)
http://epthinktank.eu (blog)