Assessment of the impacts of using digital tools in the context of cross-border company operations

Final Report
Assessment of the impacts of using digital tools in the context of cross-border company operations – Final Report

EUROPEAN COMMISSION
Directorate-General for Justice and Consumers
Directorate A — Civil and commercial justice
Unit A.3 — Company law
E-mail: just-a3@ec.europa.eu

European Commission
B-1049 Brussels
Assessment of the impacts of using digital tools in the context of cross-border company operations

Final Report
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<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>AED</td>
<td>Administration de l'enregistrement et des domaines</td>
</tr>
<tr>
<td>CBDM</td>
<td>Cross-border mergers directive</td>
</tr>
<tr>
<td>CEIDG</td>
<td>Polish Central Registration and Information on Economic Activity</td>
</tr>
<tr>
<td>CFE</td>
<td>Centres des Formalités des Entreprises</td>
</tr>
<tr>
<td>EBR</td>
<td>European Business Register</td>
</tr>
<tr>
<td>eCDF</td>
<td>Plateforme électronique de Collecte des Données Financières</td>
</tr>
<tr>
<td>EGVP</td>
<td>Elektronisches Gerichts- und Verwaltungspostfach</td>
</tr>
<tr>
<td>eID</td>
<td>Electronic Identification</td>
</tr>
<tr>
<td>ePUAP</td>
<td>Elektroniczna Platforma Usług Administracji Publicznej</td>
</tr>
<tr>
<td>ETUC</td>
<td>European Trade Union Confederation</td>
</tr>
<tr>
<td>ETUI</td>
<td>European Trade Union Institute</td>
</tr>
<tr>
<td>HGB</td>
<td>Handelsgesetzbuch</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labour Organisation</td>
</tr>
<tr>
<td>INE</td>
<td>Portuguese National Institute of Statistics</td>
</tr>
<tr>
<td>KRS</td>
<td>Polish National Court Register</td>
</tr>
<tr>
<td>KvK</td>
<td>Kamer van Koophandel</td>
</tr>
<tr>
<td>NAF</td>
<td>Nomenclature d'Activité Française</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>PCN</td>
<td>Plan Comptable Normalisé</td>
</tr>
<tr>
<td>RCS</td>
<td>Luxembourgian Trade and Companies Register</td>
</tr>
<tr>
<td>RESA</td>
<td>Recueil électronique des sociétés et associations</td>
</tr>
<tr>
<td>SBR</td>
<td>Standard Business Reporting</td>
</tr>
<tr>
<td>SCA</td>
<td>Standard Chart of Accounts</td>
</tr>
<tr>
<td>VAT</td>
<td>Value Added Tax</td>
</tr>
<tr>
<td>VDR</td>
<td>Virtual Data Room</td>
</tr>
</tbody>
</table>
1. Abstract

This report presents the results of a study assessing the impact of the use of digital tools in four company operations (company registration, the dissolution of companies, the filing and disclosure of company information and mergers) on three target areas; socio-economic, legal certainty and fraudulent / illegal activity.

It assesses the availability and use of digital tools, identifies impacts in the target areas, and through a bespoke methodology assesses the existence (or not) of causal relationships between one and the other.

The availability of end-to-end direct digital tools in company operations varies greatly among Member States, as does the identified impacts in the target areas.

Based on the evidence provided, in the majority of cases, causality between the use of digital tools and the identified impacts could not be established. In the instances where causality has been established, it has been shown to be positive.
2. Executive Summary

2.1 Study objectives

The study objectives were to provide a thorough assessment of the impacts of the use of digital tools in company law on the following three target areas:

- Socio-economic (including level of employment, working conditions and social protection of employees, employee rights to information, consultation and, where relevant, participation in company boards, posting of workers or income distribution);
- Legal certainty; and
- Illegal / fraudulent activities.

These impacts have been assessed for four company law operations:

- **Company registration** – the process of setting up a new legal entity that can keep profits, pay tax and which is legally and financially distinct from those who operate it;
- **Dissolution of companies** – removal of a company from the list of registered businesses, as compiled in a Member States’ Companies Registry list, and having all of the assets and liabilities of the company returned to the founder or nominated director;
- **Filing and disclosure of company information** – the process through which companies file and publish information relating to the company (e.g. accounting documents, changes to company details) in business registers, or any other public authority-related media; and
- **Mergers** – processes to unite two existing companies into a new one.

The report focuses on 14 Member States (Belgium, Bulgaria, Denmark, Estonia, France, Germany, Hungary, Italy, Luxembourg, the Netherlands, Poland, Portugal, Romania and the United Kingdom).

2.2 Introduction and methodology

A thorough assessment of the following aspects, related to the digitalisation of company law operations, is provided:

- The identification of the availability of digital tools for company law operations and the impacts on the three target areas (i.e. socio-economic, legal certainty and fraudulent / illegal activities);
- The quantification and qualification of the use of digital tools for company law operations and the impacts relevant to the three target areas;
- Assessment of causal relationships between the use of digital tools for company law operations and the impacts relevant to the three target areas;
- An overview of existing EU and national-level measures, taken by competent authorities, to promote the positive impacts and to address the adverse impacts of the use of digital tools in the context of company law operations on the three target areas;

The information collected relating to the three target areas has subsequently been used to assess whether causality could be established; in other words, whether the use of digital tools can be said to be causing the observed impacts. Given the challenges associated with assessing causal relationships in complex environments, primarily due to the competing influences of multiple factors and the availability of comprehensive data, clarity, on how causality is assessed, is important. To establish causation, between the availability and use of digital tools and the observed impact, both qualitative and quantitative data has been used through a mixed methods causal analysis. The causal link strength assessment is based on two fundamental comparative exercises:

- The availability and use of digital tools in the four company law operations and the subsequent impacts on the three target areas between selected Member States;
- The impacts of the four company law operations before and after the introduction of digital tools within individual Member States.

The analytical approach underlying this causal link assessment has been structured within a framework that is both fluid and flexible with respect to the availability of data inputs. In most cases, causation has been established on the basis of legal theory. There are two classes of theories that
describe the criteria for the existence of causal connections in law\(^1\). The first class concerns the identification of the causally relevant conditions of an outcome, i.e. ‘cause-in-fact’\(^2\). As such, this class of theories poses the question "Must the cause be a necessary condition, a sufficient condition or a necessary member of a set of conditions that are together sufficient for the outcome?"\(^3\). The second class seeks to determine where legal responsibility lies in relation to ‘cause-in-fact’ conditions should be limited. Both classes are used to assess causality in relation to this study. The first characterises the primary judgement of whether the use of digital tools is a necessary condition, or member of a necessary set of conditions, for the occurrence of an identified impact; the second provides a framework to judge the strength of each condition’s contribution to the impact when more than one condition is involved.

2.3 Availability of digital tools in company operations

The regulatory landscape with regard to the use of digital tools in the four company law operations across the 14 Member States is diverse. Digital tools for company registration and dissolution, filing and sharing of company information and mergers are made available (or not) through a variety of legal and practical vehicles. The next four sub-sections look to provide an overview of the availability of digital tools across the 14 Member States for each of the four company law operations, as well as the legal frameworks that regulate them\(^4\). As shown in the table below, the availability of digital tools in company operations diverges between Member States and, where they are available, they are not always direct and end-to-end.

<table>
<thead>
<tr>
<th>Company operation</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company registration</td>
<td>Out of the 14 Member States included in the scope of this study, six currently have digital tools in place that allow for direct, end-to-end company registration operations, namely EE, PT, PL, DK, UK, FR. Seven Member States also allow for the use of digital tools in the context of company registration operations, but not in a direct or end-to-end manner, namely IT, DE, NL, BG, LU, HU, BE(^5). In these Member States, intermediaries are usually required for registering limited liability companies through digital tools.</td>
</tr>
<tr>
<td>Filing and sharing of company information</td>
<td>Out of the 14 Member States included in the scope of this study, six currently have digital tools in place that allow for direct, end-to-end filing and sharing of company information operations, namely EE, PT, PL, DK, IT, UK(^6). Out of the remaining Member States, DE, NL, BG, FR, LU, HU, BE also allow for the use of digital tools in the context of filing and sharing of company information operations, but not in a direct or end-to-end manner. In these Member States, intermediaries are usually required for filing and disclosing information on limited liability companies through digital tools.</td>
</tr>
<tr>
<td>Company dissolution</td>
<td>Out of the 14 Member States included in the scope of this study, three currently have digital tools in place that allow for direct, end-to-end company dissolution operations, namely EE, PL, DK. Out of the remaining Member States, PT, UK, IT, DE, NL, BG, FR, LU, HU, BE also allow for the use of digital tools in the context of company dissolution operations, but not in a direct or end-to-end manner. In these Member States, intermediaries are usually required for dissolving limited liability companies through digital tools.</td>
</tr>
<tr>
<td>Mergers</td>
<td>Out of the 14 Member States included in the scope of this study, only Denmark currently has digital tools in place that allow for direct, end-to-end company registration operations in Romania was found to be limited in comparison to the other 13 Member States.</td>
</tr>
</tbody>
</table>

4. For an in-depth description of the regulatory landscape within each Member State, please see the annexed country fiches (Appendix VI).
5. The availability of digital tools for company registration operations in Romania was found to be limited in comparison to the other 13 Member States.
6. A comprehensive list of which documentation can be filed electronically in the UK is provided in *Table 6*.
Assessment of the impacts of using digital tools in the context of cross-border company operations – Final Report

Company operation | Availability
--- | ---
to-end company merger operations. Out of the remaining Member States, UK, PL, EE, IT, DE, NL, BG, FR, LU, HU, BE, PT also allow for the use of digital tools in the context of company merger operations, but not in a direct or end-to-end manner. In these Member States, intermediaries are usually required for mergers of limited liability companies through digital tools.

2.4 Observed impact on the target areas

An assessment of the magnitude of identified and/or perceived impacts across the three impact target areas (i.e. socio-economic, legal certainty, fraudulent / illegal activities) has been undertaken in each of the 14 Member States. These are summarised in the table below. In some cases, such as for EE, impacts can be registered as being both positive and negative, highlighting the complexity of the issues at hand.

<table>
<thead>
<tr>
<th>Socio-economic target area</th>
<th>Registration</th>
<th>Filing disclosure</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>High positive</td>
<td>EE, PT</td>
<td>EE, PT</td>
<td>EE, PT</td>
<td>PT</td>
</tr>
<tr>
<td>Moderate positive</td>
<td>BG, HU, PL, UK</td>
<td>BG, HU, UK</td>
<td>BG, HU, PL</td>
<td>BG, HU</td>
</tr>
<tr>
<td>Low</td>
<td>BE, DE, DK, FR, LU, NL, RO</td>
<td>BE, DE, DK, FR, LU, NL, PL, RO</td>
<td>BE, DE, DK, FR, LU, NL, RO, UK</td>
<td>BE, DE, DK, EE, FR, IT, LU, NL, PL, RO, UK</td>
</tr>
<tr>
<td>Moderate negative</td>
<td>HU, IT</td>
<td>HU, IT</td>
<td>HU, IT</td>
<td>HU</td>
</tr>
<tr>
<td>High negative</td>
<td>EE</td>
<td>EE</td>
<td>EE</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Legal certainty target area</th>
<th>Registration</th>
<th>Filing disclosure</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>High positive</td>
<td></td>
<td>PL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate positive</td>
<td>EE, PT</td>
<td>EE, PT</td>
<td>EE, PT</td>
<td>IT, PT</td>
</tr>
<tr>
<td>Low</td>
<td>BE, BG, DE, DK, FR, HU, IT, LU, NL, PL, RO, UK</td>
<td>BE, BG, DE, DK, FR, HU, IT, LU, NL, RO, UK</td>
<td>BE, BG, DE, DK, FR, HU, IT, LU, NL, PL, RO, UK</td>
<td>BE, BG, DE, DK, EE, FR, HU, LU, NL, PL, RO, UK</td>
</tr>
<tr>
<td>Moderate negative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High negative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fraudulent / illegal activity target area</th>
<th>Registration</th>
<th>Filing disclosure</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>High positive</td>
<td>PT</td>
<td></td>
<td>PT</td>
<td></td>
</tr>
<tr>
<td>Moderate positive</td>
<td>PT</td>
<td>IT</td>
<td>IT, UK</td>
<td>UK</td>
</tr>
<tr>
<td>Low</td>
<td>BE, BG, DE, DK, EE, FR, HU, IT, LU, NL, PL, RO</td>
<td>BE, BG, DE, DK, EE, FR, HU, LU, NL, PL, RO</td>
<td>BE, BG, DE, DK, EE, FR, HU, LU, NL, PL, PT, RO, UK</td>
<td>BE, BG, DE, DK, EE, FR, HU, IT, LU, NL, PL, RO, UK</td>
</tr>
<tr>
<td>Moderate negative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.5 Conclusion

For the socio-economic impact target area, 31 potential causal links were assessed covering nine of the 14 Member States (Bulgaria, Germany, Estonia, Hungary, Italy, Netherlands, Poland, Portugal and the UK). The exploration of causal links in the five remaining Member States was not developed further as: i) two of the five Member States (Belgium and Romania) have limited availability and use of digital tools across the four company law operations; and ii) in three (Denmark, France, Luxembourg), limited impacts were reported in relation to the socio-economic impact target area.

Regarding the 31 potential causal links assessed, causality has been established between the use of digital tools for company law operations and identified impacts in 10 instances covering all nine Member States. In a further 18 instances, the use of digital tools has been considered as contributing, to some extent, to the impact, although no causality can be established. In these cases, the extent to which the use of digital tools contributed to the identified impact is clearly discussed. Considering the instances where causality has been established, it is notable that these exclusively relate to the positive impact of the use of digital tools on the efficiency of conducting the four company law operations.

For the legal certainty impact target area, causality has not been established for any of the four potential causal links examined (Hungary, Estonia, Poland and Portugal). In fact, across all four instances, the use of digital tools has been found to be a contributing, but not causal, factor in relation to positive impacts on legal certainty. This finding is in contrast to the overarching hypothesis, documented in section 4.3, related to this impact target area.

Based on the evidence provided across the 14 Member States examined, and the Member State-level causality assessments, the initial hypothesis related to the impacts of the use of digital tools on legal certainty has been rejected. No evidence has been collected suggesting that the use of digital tools for company law operations could have a negative impact on legal certainty; in fact, all stakeholders perceive the impacts of using digital tools for company law operations on legal certainty to be positive. However, this relationship is also not determined to be causal.

For the fraudulent / illegal activities target area, causality has not been established for any of the three potential causal links examined (Italy, Portugal and the United Kingdom). For two of the three cases, the use of digital tools is considered to play a moderate contributory role, but not a causal role. In these instances, the strength of the evidence and the influence of other factors lead to this assessment. Based on the evidence provided across the 14 Member States examined, and the Member State-level causality assessments, the initial hypothesis related to the impacts of the use of digital tools on fraudulent / illegal activities has been rejected. In fact, similar to the conclusions on legal certainty, it is considered by the vast majority of stakeholders that the use of digital tools for company law operations will lead to a reduction in fraudulent / illegal activities. However, this positive relationship is not determined to be causal.
3. Introduction

**What you will find in this chapter:**

Chapter 3 presents introductory information on the study, including its aims, its material and geographical scope, and the structure and content of this report.

**Study objectives**

This report contains a detailed presentation of the following aspects related to the digitalisation of company law operations:

- Identification of the availability of digital tools for four company law operations (company registration, filing and disclosure of company information, company dissolution and mergers) and the potential impacts on three target areas (i.e. socio-economic, legal certainty and fraudulent / illegal activities);
- Quantification and qualification of the use of digital tools for these company law operations and the magnitude of the impacts relevant to the three target areas;
- Assessment of causal relationships between the use of digital tools for company law operations and the impacts relevant to the three target areas; and
- An overview of existing EU and national-level measures, taken by competent authorities, to promote the positive impacts and to address the adverse impacts of the use of digital tools in the context of company law operations on the three target areas.

**Material scope and report structure**

This document is structured in eight chapters; this section provides a high-level overview of the contents presented throughout the report.

Specifically, the research outputs presented in the report are:

- **Descriptive summaries** of: i) the EU level regulatory framework with regard to the four company operations to be examined; and ii) the perceptions of EU level experts and stakeholders on the relevant positive / adverse impacts of the use of digital tools in the three target areas;
- **14 country fiches** setting out the situation in all Member States with regard to the legal and practical availability of digital tools for the four company law operations, covering both their national and the cross-border implementation. Where the use of digital tools is available, the perceptions of stakeholders on the relevant positive and / or adverse impacts on the three target areas are detailed;
- **Overview** of the 14 country fiches and EU level data, drawing out similarities and differences across the Member States with regard to: i) the legal and practical availability of digital tools for the four company law operations (at national and cross-border levels); and ii) the perceptions on the relevant impacts of the use of digital tools on the three target areas;
- **Typology** of Member States covering:
  - Availability of digital tools, presenting:
    - The extent to which digital tools are available for each of the four company law operations;
    - Whether this availability is stipulated through legal or other means; and
    - Whether this availability differs for national vs cross-border operations.
  - Relevant positive / adverse impacts, presenting:
    - The digital tools used for which company law operation(s) have potentially caused the impact;
    - Which target areas are impacted; and
    - Which stakeholders are impacted.
- **Assessment of primary and secondary quantitative and qualitative data on the extent** to which digital tools are used for the four company law operations in the selected 14 Member States. This assessment also includes an analysis of whether the use of digital tools differs for national compared with cross-border implementation;
Assessment of primary and secondary quantitative and qualitative data on the magnitude of the positive and adverse impacts of the use of digital tools for the four company law operations, at both national and cross-border levels, on the three target areas across the selected 14 Member States;

A range of use-magnitude matrices presenting the extent of the use of digital tools for a specific company law operation against the magnitude of a specific impact;

Assessment of causal relationships between the use of digital tools for the four company law operations and the relevant positive / adverse impacts on the three target areas across the selected 14 Member States. This assessment examines whether causal relationships exist, as well as the strength of those relationships. The initial assessment of causal relationships between the use of digital tools for the four company law operations and the relevant impacts on the three target areas has been forwarded to pre-identified stakeholders (i.e. including, but not limited to: ETUC, ETUI, BusinessEurope and the European Business Register), for deliberation, validation, and quality assessment;

A parallel assessment of the causal relationships between the use of digital tools for company registration and the relevant positive / adverse impacts on the three target areas in the form of three case studies:

- The socio-economic impacts of using digital tools for the registration of limited liability companies: a case study of Danish and German companies operating in Poland;
- The legal certainty impacts of using digital tools for the registration of limited liability companies: a case study of Swedish and German document authentication processes;
- The fraudulent / illegal activity impacts of using digital tools for the registration of limited liability companies: a comparative case study between companies registered in Estonia, Portugal and Belgium.

Geographical scope

This study covers 14 Member States that represent a balanced coverage of:

i) Both the EU-15 and the EU-13;

ii) Member States with and without direct, end-to-end online procedures for registration and disclosure of company information (on a national and possibly also cross-border basis);

iii) Member States with obligatory direct, end-to-end electronic filing by companies (including for the purpose of dissolution);

iv) Member States in which digital tools are frequently used in cross-border merger procedures; and

v) Member States with or without safeguards in the context of their online procedures.

The table below presents a list of 14 Member States that have been identified through desk research and consultation with the study experts, with the rationale for each of them. In addition to the above criteria, geographical diversity was also ensured.

<table>
<thead>
<tr>
<th>Member State</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium (BE)</td>
<td>Registration can be carried out online but must be done by a notary and the registration number must be activated via Belgium’s one stop shop. The e-notariat system allows the filing of information electronically.</td>
</tr>
<tr>
<td>Denmark (DK)</td>
<td>Comprehensive online process for all company law operations. These procedures are safeguarded through the use of the NemID (Digital Signature) and an online key card.</td>
</tr>
<tr>
<td>France (FR)</td>
<td>Comprehensive company registration, as long as an ‘electronic certificate’ is used. However, regulated professions cannot be registered online. Electronic filing of information is not obligatory although a range of safeguards is in use (SIRET number with taxation; e-signatures).</td>
</tr>
<tr>
<td>Member State</td>
<td>Rationale</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Germany (DE)</td>
<td>Registration can be carried out online but must be done by a notary. No end-to-end digital tools are available to carry out the four company law operations.</td>
</tr>
<tr>
<td>Italy (IT)</td>
<td>Two separate processes comprise company registration in Italy: company formation and company registration. Company formation, for the most part, requires notary intervention. The only exception is the case of innovative start-ups. Such start-ups are not required to sign their articles of association before a notary; instead, they can use their digital signature. Contrastingly, company registration with the business register can be done fully electronically. Documents must be filed electronically and safeguards are in place in the form of a certified email address (PEC).</td>
</tr>
<tr>
<td>Luxembourg (LU)</td>
<td>Online registration is available but not in a direct, end-to-end fashion and requires notary intervention. Documents are then filed electronically and safeguards are in place in the form of accounts with passwords. Electronic platforms are also available for company dissolution but are not direct or end-to-end.</td>
</tr>
<tr>
<td>Netherlands (NL)</td>
<td>Online registration is available but not mandated and submitted company documents are filed electronically. However, in many instances, the physical presence of a public notary is used to mitigate online risk.</td>
</tr>
<tr>
<td>Portugal (PT)</td>
<td>Direct, end-to-end online procedures are available for company registration and disclosure of information, with obligatory electronic filing, and mergers. The use of the digital signature from the national ID card safeguards this process and this set-up allows close links with the systems in Spain, Estonia and Sweden.</td>
</tr>
<tr>
<td>United Kingdom (UK)</td>
<td>Company registration is possible through direct, end-to-end online means for both residents and non-resident, foreign EU citizens. Electronic filing is obligatory for certain documentation, and digital tools are frequently used during the due diligence stage of cross-border merger operations. National Insurance numbers are also used to guarantee these processes.</td>
</tr>
<tr>
<td>EU-13</td>
<td></td>
</tr>
<tr>
<td>Bulgaria (BG)</td>
<td>A comprehensive end-to-end online procedure for registration and disclosure of company information, for both residents and non-resident EU citizens. However, it is reported that this is not extensively used. Electronic filing of information, if obligatory, and safeguards, in the form of ID numbers, are in place.</td>
</tr>
<tr>
<td>Estonia (EE)</td>
<td>Digital infrastructure is in place for all of the company operations to be undertaken online. Electronic filing is also obligatory and a range of safeguard measures are undertaken: document encryption; digital signatures; and digital verification of document authenticity. The available electronic platforms can be considered direct and end-to-end for all company law operations except mergers, which usually requires intervention of a notary.</td>
</tr>
<tr>
<td>Hungary (HU)</td>
<td>Registration is possible online but not in a direct, end-to-end fashion, as documents must be countersigned by a Hungarian attorney. All documents must be submitted electronically and electronic signatures and time stamps are employed as safeguards.</td>
</tr>
<tr>
<td>Poland (PL)</td>
<td>Nationals and non-resident EU citizens can complete company registration entirely online in a direct, end-to-end manner; all aspects of the company lifecycle are stored electronically. Either electronic signatures or an ePUAP profile (electronic platform for public services) is required.</td>
</tr>
<tr>
<td>Romania (RO)</td>
<td>Some information filing aspects of online registration are possible, but only through an authorised body, and, although some documents are stored electronically, there is no obligatory electronic filing of company information. No direct, end-to-end tools are available for any of the operations.</td>
</tr>
</tbody>
</table>
4. Setting the scene

What you will find in this chapter:
Chapter 4 presents further information on the material scope of the study, providing detailed descriptions of the four company law operations under examination (section 4.1), as well as the three impact target areas (section 4.2). Section 4.3 provides the initial impact hypotheses, which are tested through later analyses, and section 4.4 describes the current EU-level regulatory framework for the four company law operations.

This chapter is divided into four sections and corresponding sub-sections, and describes the conceptual understanding of the four company law operations (i.e. company registration, filing and disclosure of company information, company dissolution and mergers). It also looks to define the three impact target areas (i.e. socio-economic, legal certainty, and fraudulent / illegal activities). The research hypotheses that underlie this study, and the indicators associated to those hypotheses, are presented at the end of this chapter, alongside an outline of the relevant EU-level legal framework regulating the use of digital tools in the context of company law operations.

Digitalisation and digital tools are both important in the context of company law operations because they can quickly and cheaply enable the connection of large numbers of users from a variety of locations and backgrounds. Additionally, digitalisation allows for the substitution of hard copy communications with electronic communications while providing a platform that offers new ways of operating, often fostering increases in operational efficiency and enabling cost reductions. Digital tools enhance the value of digitalisation by providing the opportunity to process, access, analyse and disseminate information quickly.

The operations under scrutiny are listed below – particular emphasis is attributed to end-to-end and direct operational modalities for each of the company law operations:

- **Company registration** – the process of setting up a new legal entity that can keep profits, pay tax and which is legally and financially distinct from those who operate it;
- **Dissolution of companies** – removal of a company from the list of registered businesses, as compiled in a Member States’ Companies Registry list, and having all of the assets and liabilities of the company returned to the founder or nominated director;
- **Filing and disclosure of company information** – the process through which companies file and publish information relating to the company (e.g. accounting documents, changes to company details) in business registers, or any other public authority-related media; and
- **Mergers** – processes to unite two existing companies into a new one.

4.1 The four company law operations

4.1.1 Company registration

Company registration is the process of setting up a new legal entity that can account for and dispose of profits, pay tax and which is legally and financially distinct from those who operate it. In order to set up a company, a number of essential legal documents are usually required by Member States’ respective business registries. These normally, but not always, include:

- Proof of a unique company name;

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7 In the context of this report, the term ‘Digitalisation’ refers to the representation of communication in writing or sound by electronic means, as well as the transmission and storage of such communications electronically, including access and retrieval of these communications from such storage.

8 In the context of this report, the term ‘Digital tools’ concerns any hardware, software (including algorithmic implementations for data processing purposes) or digital networks which enable manual processes to be digitalised, standardised, automated and transferred to other stakeholders with corresponding equipment.

9 Knapp V. and Directorate-General for Internal Policies (2016). What are the issues relating to digitalisation in company law?

10 In this context, ‘end-to-end’ refers to processes that bypass the need of appearing in person before any authority (e.g. notaries); ‘direct’ refers to processes whereby company founders would have an option to complete the procedure themselves, rather than relying on assistance from intermediaries.
A unique company address;
Legal proof of the identity of the founder or director;
Articles of association;
A minimum deposited amount of capital; and
Proof of VAT registration.

Following the 2008 Communication 'Think Small First' / A 'Small Business Act' and a further commitment to its adoption in May 2011 by the Competitiveness Council, Member States are encouraged to meet certain targets that aim at standardising and simplifying the company registration process, namely:

- Company registration possible in no more than three working days;
- Cost of registration not greater than EUR 100;
- All procedures carried out through a single administrative body;
- Completion of all registration formalities online;
- Online company registration in another EU country.

There is a significant amount of divergence across the Member States in terms of how these different documents are ratified when an organisation is established. The implications of this are that the amount of time and cost of setting up companies in the different Member States varies significantly. For instance, excluding any elements of company registration outside of the scope of this report (e.g., registering the company for taxes and registering employees for health insurance), Estonia – a Member State with a direct online end-to-end digital solution for registration – provides for checking the company name, submitting the registration application to the Commercial Register in less than one day at a cost of EUR 145. By contrast, in Germany, which does not provide an end-to-end digital solution, checking the company name, notarising Articles of Association, and filing the Articles of association at the local Commercial Register takes approximately six days and the minimum cost is EUR 400.

4.1.2 Dissolution of companies

The dissolution of a company involves having the legal entity struck off the list of registered businesses from the Member States’ Companies Registry list and all of the assets and liabilities of the company returned to the founder or nominated director. Once this has taken place the company is no longer a distinct legal entity and loses the rights it formally held; it is also no longer required to provide information relating to its operations. Company dissolution and liquidation can only occur in the instance where certain financial and legal criteria are met by the entity that is to be dissolved. The criteria which a company must meet differ across the Member States but, irrespective of the Member State, the process is far lengthier than for company registrations. Before the assets of the company can be redistributed a number of checks need to be made into the company’s current position and its history. A company cannot be dissolved unless it is solvent, checks have been made to creditors that no debt is owed and that the company has not recently changed its name. In Poland, for example, the process of dissolution, in practice, takes 9-18 months. By contrast,

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11 European Commission & Centre for Strategy & Evaluation Services (2015). _Study on the compliance by Member States on the time needed to get licences and permits to take up and perform the specific activity of an enterprise as from beginning of 2015_.
14 The cost and time effectiveness figures presented herein are based on the ‘Doing Business – Measuring Business Regulations’ summaries of the “bureaucratic and legal hurdles faced by entrepreneurs wishing to incorporate and register a new Firm in a given country”. These summaries are based on an “examination of the procedures, time and cost of launching a commercial or industrial firm with between 10 and 50 employees and start-up capital of ten times the economy’s per-capita gross national income”. The ‘Doing Business’ Report breaks down all of the separate ‘procedures’ of registering a company by country, and in each instance, illustrates the cost and time associated with each procedural element. In this way, it is possible to describe only the cost and time implications of the registration procedures within the scope of this study.
Portugal\textsuperscript{16} has made efforts towards digitalising this process, enabling all essential forms to be downloaded, so they can be filled and submitted online. Despite the fact that the process is still heavily regulated, in the instance where the company no longer has registered assets or liabilities, the process takes around one week.

The use of digital tools increases the speed with which relevant documents can be transferred and also reduces the investigative burden of ensuring the legitimacy of certain documents, owing to the traceability of electronic documents.

4.1.3 Filing and disclosure of company information

Directive 2009/101/EC requires business registers to allow companies or their representatives to file company information in electronic form\textsuperscript{17}. Practical aspects related to the filing and disclosure of such information are still left to national-level regulation.

Currently, companies must occasionally provide certain stated information to their national business registries after incorporation, e.g. filing a copy of their financial accounts. The use of digital tools in this context has been enforced by Directive 2009/101/EC, under which Member States must ensure that certain information (Core Information) can be filed by electronic means\textsuperscript{18}, namely:

- The company’s constitution;
- Changes to the constitution;
- Details of those authorised to represent the company in dealings with third parties and legal proceedings, as well as those who administer, supervise and control the company;
- The complete text of the constitution as amended;
- The capital subscribed (i.e. once a year);
- The appointment of a liquidator;
- Termination of a liquidation;
- Whether the company is being wound up;
- Accounting documents;
- Changes to the registered office; and
- Striking off the company and any declaration of nullity by the courts.

Directive 2009/101/EC also requires companies or their representatives to file company information (e.g. in a national gazette) and includes an option for Member States to allow companies to meet this requirement electronically.

The digitalisation of this operation provides essential visibility into different organisations. In addition, it reduces the risk of shareholders and other stakeholder organisations being defrauded through not having full access to relevant company information. In this respect, the digitalisation of this company law operation enables companies to more effectively comply with existing legislation designed to protect those doing business in the single market, and to do so in a way that reduces the cost and administrative burden.

\textsuperscript{16} Source: - Portal do Cidadão, Extinção de Sociedades na Hora: https://bde.portaldocidadao.pt/cve/pt/FerramentasdeApoio/Guiao/versaoImpressao?guid=%7BD14E8001-DB56-431A-AE8D-16E80D686B02%7D

\textsuperscript{17} Directive 2009/101/EC of the European Parliament and the Council of 16 September 2009 on coordination of safeguards which, for the protection of the interests of members and third parties, are required by Member States of companies within the meaning of the second paragraph of Article 48 of the Treaty, with a view to making such safeguards equivalent.

\textsuperscript{18} Directive 2009/101/EC of the European Parliament and the Council of 16 September 2009 on coordination of safeguards which, for the protection of the interests of members and third parties, are required by Member States of companies within the meaning of the second paragraph of Article 48 of the Treaty, with a view to making such safeguards equivalent.
4.1.4 Cross-border mergers

A merger is defined as a deal to unite two existing companies into one new company. The possibility for limited liability companies to merge across borders within the geographical area of the EU and the EEA on the basis of a clear, predictable and structured framework became a reality in 2005, with the Cross-Border Mergers Directive of Limited Liability Companies (CBMD)\(^\text{19}\). This was of crucial importance to the free flow of labour and capital across Member States, and to the assurance of the strength of European financial markets\(^\text{20}\). The CBMD has brought about a new age of cross-border mergers activity: stakeholders contacted by Lexiddale & Bech-Bruun have consistently reported their satisfaction with the Directive and consider it to be an important step towards a more vibrant and robust market environment within the EU and EEA\(^\text{21}\). This is reflected in the 173\% increase in cross-border merger activity between 2008 and 2012, from 132 cross-border mergers in 2008 to 361 in 2012, indicating that the new procedure has opened up a bottleneck in economic activity within the EU and EEA by improving cross-border mobility\(^\text{22}\).

**Figure 1:** Number of cross-border mergers from 2008 to 2012 in the EU and EEA.

\[\text{173}\% \text{ increase in cross-border merger activity from 2008 to 2012 in the EU and EEA}\]


This effect is even more impressive when the slow growth of the European economy following the global economic crisis is considered. Indeed, implementation of CBMD resulted in various benefits and cost-saving effects, namely:

- Reduced regulatory costs and facilitated enablement of economies of scale;
- Reduced organisational and operational costs;
- Opening of the internal market while keeping legal certainty in cross-border merger operations;
- Procedural simplification;
- Facilitation of integrated products and services within and across economic sectors; and
- Lowering of agency costs, reducing the need for stakeholders to design specific conflict resolution mechanisms.


\(^{20}\) Lexiddale & Bech-Bruun (2013). *Study on the application of the cross-border mergers directive.*

\(^{21}\) Lexiddale & Bech-Bruun (2013). *Study on the application of the cross-border mergers directive.*

\(^{22}\) Lexiddale & Bech-Bruun (2013). *Study on the application of the cross-border mergers directive.*
The benefits of applying digital tools to merger operations in the EU stem from two main features: Firstly, increased operational efficiency – by using electronic tools instead of hard copies, both time and administrative savings are garnered, while ensuring data authenticity, security and clear document audit trails are in place. Secondly, increased cross-border interconnection between national registries – by using electronic tools, rapid cross-border communication between registers is facilitated, standardisation of processes can be achieved, as can increased security for the transfer of essential documents.

Information about potential mergers, however, is highly sensitive in nature – disclosing information in one confidential document can be enough to generate heavy consequences for the parties involved, and for the integrity of the merger deal itself. This highlights the increased threat that digitalised merger operations are subject to, in comparison to the other company law operations covered by this study. There is a more pronounced cyber security requirement for digitalised merger operations needed; however, the advent of digital tools in mergers offers a number of innovations to be adopted in the space, including virtual data rooms, which improve access to secure information.

Table 2: Virtual Data Rooms (VDRs): definitions and application to merger transactions.

Virtual Data Rooms (VDRs)

At a global level, merger and acquisition transactions are increasingly using technology to increase the efficiency and success rate of deals. VDRs have emerged as technology-based due diligence tools to facilitate access and use of data rooms in merger and acquisition transactions. Data rooms are essentially online repositories of digital information used for storing and distributing documentation in a secure way.

Several advantages have been reported by VDR adopters such as cost and time saving, comfort, transparency, security, and simplicity. Disadvantages include the competitive price charged by VDR providers, system speed and having to read documents online.

VDRs differ from their predecessor (PDRs – physical data rooms) in the following ways:

- Online vs physical location;
- Digital documentation vs paper-based;
- Central data storage vs physical location; and
- Parallel stakeholder access vs sequential access.

23 MANDA – Institute of Mergers, Acquisitions and Alliances (2007). Do virtual data rooms add value to the mergers and acquisitions process?
24 MANDA – Institute of Mergers, Acquisitions and Alliances (2007). Do virtual data rooms add value to the mergers and acquisitions process?
4.2 The impact target areas

There are three impact target areas on which the use of digital tools for company law operations will be analysed. These will be where the causality of any positive and adverse impacts of the use of digital tools will be established and the extent of the magnitude of these impacts analysed. The three target areas relate to:

- Socio-economic;
- Legal certainty; and
- Fraudulent / illegal activities.

For each target area, the following sections present the initial selection of potential impacts. These impacts have been selected on the basis of their perceived potential to be influenced by the use of digital tools (i.e. potential for causal links between the use of digital tools and the identified impacts). Hypotheses describing these potential relationships have been developed and are presented in section 4.3, alongside relevant indicators that will facilitate the assessment of these impacts and their relationship to the use of digital tools for company law operations.

4.2.1 Socio-economic impacts

The first target area looks at a range of socio-economic indicators to examine whether and how changes in these indicators might be the direct result of the use of digital tools for company law operations (i.e. whether a causal relationship exists).

This is the broadest of the three target areas and focuses on areas that directly affect the quantity and quality of employment, focusing on employee rights, as ensured by European Law. In addition, this target area examines impacts that influence the commercial environment of the Single Market and the development of each individual Member State’s economy.

The following list presents the initial indicators explored:

- Level of employment;
- Creation of letter-box companies;
- Number of self-employed persons;
- Working conditions;
- Social protection;
- Income inequality;
- Industry and labour market polarisation;
- Potential loss of public revenue;
- Posting of workers; and
- Employee board representation and the right to information.

On examination of these initial indicators through extensive desk research, consultations with key stakeholders and the first pilot run of the causality analysis, it was determined that several of the indicators can be removed from the analysis at the outset. This is due to the extensive influence of external factors, which render the use of digital tools as a peripheral factor in causing any impact that may have occurred. As such, this removes the possibility of establishing direct causal links between the use of digital tools across the four company law operations and any impacts identified in relation to these indicators.

Section 4.3 presents the reduced list of indicators and provides further detail on the assessment described above.

Stakeholders consulted include BusinessEurope, the European Trade Union Confederation (ETUC), the European Trade Union Institute (ETUI) and the European Business Register (EBR).
4.2.2 Legal certainty impacts

This target area concerns any issues that might undermine the perception that company law operations, when carried out through less traditional, digital mediums, are as legally valid and likely to be authentic, or at least, as easy to ratify as when they had been done using paper. The areas of analysis in this domain will focus on issues surrounding the security and authenticity of legal documents, and how to ensure that, in the instance where a document is not submitted in person, it was submitted by the individual who claimed to submit it, and that they had the authority to act on behalf of the company they claimed to represent. This rationale is extendable to the documents themselves, which is to say that legal certainty does not apply exclusively to instances where individuals take specific actions to authenticate company law processes, but also to the processes that relate to the (legal) authentication of the documents in question. In addition to ensuring the authenticity of legal documents, the indicators relating to this area will focus on issues around storing such large volumes of legal documents and ensuring that they are secure. It is essential for the smooth functioning of the Single Market that there is the perception of certainty of legal documents as being accurate and binding. Another relevant aspect is that of corruptive practices in the interface of companies and business registers (i.e. as well as other relevant public bodies); for example, in the instance where an individual seeks to register a new company without the required legal documentation by bribing a public body official.

Given the inherent legal element of this target area, the indicators will be primarily qualitative. In the context of associating the use of digital tools with a potential reduction in corruption (i.e. in the interface of companies and business registers), the Corruption Perception Index from Transparency International is consulted as a proxy for quantitative data.

4.2.3 Fraudulent / illegal activities impacts

The impacts on fraudulent / illegal activities will look to illustrate how and where criminality might be enabled and grow where the use of digital tools increases. While the use of digital tools is not standardised across the Member States, especially in the instance of business registries, there is the possibility that this lack of international cohesion will make it easy to use digital tools to carry out financial crime more effectively and on a greater scale. As business environments become progressively more digital it is not altogether clear whether the use of digital tools directly enables or hinders financial crime.

The qualitative and quantitative indicators used to identify whether digital tools facilitated financial crime are listed below. It is considered that these indicators may also have an impact on the socio-economic area, as reported by several studies that analysed intrinsic correlations between fraudulent activity and social, economic, and financial impacts26, 27.

- Identity Fraud
  - Person ID fraud; and
  - Other false accounts.
- Tax Evasion
  - VAT;
  - Social security contributions; and
  - Corporation tax.
- Financial Crime
  - Money laundering;
  - Defrauding investors; and
  - Illegitimate investment vehicles (Ponzi and Pyramid schemes etc.).

4.3 Research hypotheses and perceptions of key stakeholder groups

A collection of key potential impacts and related indicators was collated to inform the assessment of whether causal relationships exist between the impacts identified in the three target areas and the use of digital tools for company law operations. To comprehensively evaluate the relevance of each identified impact indicator, hypotheses have been developed to describe the potential causal relationships between the use of digital tools and the indicator in question. This section presents the hypothesis for each potential impact alongside the indicators relevant to the assessment of the impact.

As detailed in section 4.2, the impacts, impact hypotheses, and related impact indicators have been developed and refined based on an extensive consultation exercise with key stakeholder groups (i.e. European Trade Union Confederation – ETUC, European Trade Union Institute – ETUI, BusinessEurope, and the European Business Register – EBR), as well as the pilot run of the causality assessment.

Target area 1: Socio-economic impacts

**Overarching hypothesis:** The use of digital tools for cross-border direct online company registration leads to a situation where companies and / or individuals based in one Member State digitally register to operate in Member States with lower social standards and / or more favourable corporate taxation environments.

**Impact 1:** the number of inactive limited liability companies not performing any economic activity in a given Member State in relation to the total number of limited liability companies in that Member State and the prevalence of digital end-to-end registration.

- **Hypothesis on the impact of digital tools:** the proportion of limited liability companies not performing any economic activity will increase as it becomes faster and cheaper to establish companies, in some instances with no initial capital requirements and no real incentive to dissolve them.
- **Selected indicators:** information from national business registries and tax authorities on the number of registered businesses reported to be economically inactive.

**Impact 2:** a link between the number of cross-border mergers in relation to the use of digital tools in cross-border company operations over the last five years.

- **Hypothesis on the impact of digital tools:** the efficiency of cross-border merger operations will increase in line with the increased use of digital tools in company law operations.
- **Selected indicators:** the volumes of cross-border merger activity over the last five years and the availability of the digital tools in the regions of highest and lowest activity. Information available in Study on the Application of the Cross-Border Mergers Directive (Bech-Bruun and Lexidale).

**Impact 3:** working conditions, covering working time (e.g. hours of work, rest periods, work schedules), remuneration, physical conditions and mental demands.

- **Hypothesis on the impact of digital tools:** the use of digital tools will lead to the movement of companies (and their activities) to Member States with more beneficial rules on working conditions (for the employee) – e.g. reduced labour costs, increased working time etc.
- **Selected indicators:** relevant indicators include those collected through the European Working Conditions Survey and those published in the 2015 report Recent developments in the distribution of wages in Europe (Eurofound). The International Labour Organisation (ILO) also has relevant data on working time and earnings.

**Impact 4:** industry and labour market polarisation – relating to the potential polarisation of particular occupations / industries in specific EU Member States or clusters of Member States.

- **Hypothesis on the impact of digital tools:** the use of digital tools will lead to the movement of companies (and their activities) to Member States that are considered to be
‘strong’ in a particular operational area, in terms of suitability of the legal framework, customer base and labour market.

- **Selected indicators**: relevant indicators include employment by industry and occupation across the EU.

**Impact 5**: potential loss of public revenue – relating to the opportunity costs to a Member State that would have received corporate tax from a company that has, instead, registered in another Member State.

- **Hypothesis on the impact of digital tools**: the use of digital tools will lead to the movement of companies to Member States that are considered to have lower corporate tax rates.
- **Selected indicators**: key data includes revenue from corporate taxation. Additional relevant proxies include the number of companies, their revenues and profits (e.g. capital gains), average employment level of companies, etc.

**Impact 6**: improved accessibility and transparency of company information for employees and other stakeholders.

- **Hypothesis on the impact of digital tools**: the use of digital tools will improve access to business information for all stakeholders, including employees.
- **Selected indicators**: perceptions of stakeholders.

**Impact 7**: business efficiency – reduced time and / or costs across all four of the company law operations being examined as a result of the use of digital tools.

- **Hypothesis on the impact of digital tools**: the use of digital tools will increase the efficiency, including reduced time and costs, with which the four company law operations can be conducted.
- **Selected indicators**: perceptions of stakeholders, as well as the costs and the time taken for each company law operation, when conducted using digital tools and offline.

**Table 3**: Socio-economic impacts for which a causal relationship has promptly been ruled out.

<table>
<thead>
<tr>
<th>Initially considered socio-economic impacts for which a causal relationship has been ruled out: the rationale</th>
</tr>
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<tbody>
<tr>
<td>The potential impacts initially identified across the socio-economic target area have been tested and examined in consultation with key stakeholders – i.e. BusinessEurope, the European Trade Union Confederation (ETUC), the European Trade Union Institute (ETUI) and the European Business Register (EBR). As a result, as well as insights gleaned from the pilot causality assessment conducted with the inclusion of these impacts, it has been determined that the following impacts cannot be deemed to have been caused by the use of digital tools across the associated company law operations. The rationale for this assessment in relation to each impact is presented below, alongside the initial indicators and hypothesis:</td>
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**Impact 8**: change in the number of self-employed persons over the last five years in relation to the existence of end-to-end company registration in that Member State;

- **Hypothesis on the impact of digital tools**: where digital tools are available and the cost of setting up a business is lower, the rate of self-employment will increase as the prospect of setting up businesses becomes more common.
- **Selected indicators**: available data on the distribution of the type of European employment based on available statistics (Eurostat), and the Self-Employment in Europe Report produced by the Institute for Public Policy Research, in partnership with J.P. Morgan Chase.

**Rationale for rejection of causality**: It is the perception of the stakeholders consulted, as well as the study experts, that the potential impact of the use of digital tools for company law operations on the rate of self-employment is significantly smaller than the influence of other external factors, such as the rise of the so-called ‘gig’ and ‘sharing’ economies.
Impact 9: level of employment; be that either full, or part-time work.

- **Hypothesis on the impact of digital tools**: as the use of digital tools increases so, too, does the rate of employment in Member States as a result of the ease in which businesses can be established and run, as well as the prospects that digital tools offer for opening new avenues of profitability to those businesses, inducing growth and new employment prospects.

- **Selected indicators**: measured using the EU’s employment statistics (Eurostat), which cover employment rates by Member State, as well as the ratio of part-time and fixed-term contracts, and job vacancy statistics.

**Rationale for rejection of causality**: It is the perception of the stakeholders consulted, as well as the study experts, that the potential impact of the use of digital tools for company law operations on the rate of employment is significantly smaller than the influence of other external factors, including a Member State’s economic and political climate.

Impact 10: social protection – relating to access to health care and income security, particularly for vulnerable groups. The ILO maintains International Labour Standards on Social Security.

- **Hypothesis on the impact of digital tools**: the use of digital tools will lead to the movement of companies (and their activities) to Member States with varying rules on social protection for employees, i.e. particularly those that are at risk of social exclusion and poverty.

- **Selected indicators**: the ILO has a suite of indicators on social protection covering health expenditure, health protection deficits, social protection coverage, public social protection expenditure, social security and pensions. The OECD also has data on social spending by public administrations.

**Rationale for rejection of causality**: It is the perception of the stakeholders consulted, as well as the study experts, that the hypothesised impact is not realistic given that it does not provide benefits to any stakeholders, particularly given that the business draw of reduced labour costs (which includes social security payments) is included under the assessment of impact 3, above.

Impact 11: income inequality – relating to the extent to which income is distributed in an uneven manner among a population.

- **Hypothesis on the impact of digital tools**: the use of digital tools will lead to individuals establishing entities in areas where the labour force is naturally suited to their business operations; this will entrench or worsen income inequality across Member States but not, necessarily, within them. Areas where the labour force is most skilled will continue to attract those employers offering the most substantial remuneration.

- **Selected indicators**: relevant indicators include employment by industry and occupation across the EU. The Gini-coefficient of inequality may also represent a relevant proxy for income inequality, developed by the OECD. Additional OECD indicators of inequality to be examined include poverty gap and poverty rate.

**Rationale for rejection of causality**: When referring to inequality within a Member State, it has been found that minimal data are available on the relevant indicators. It is the perception of the stakeholders consulted, as well as the study experts, that inequality of this nature across the EU (i.e. between Member States) is already covered by impact 4, above.

Impact 12: posting of workers – where employers send their employees to conduct their work in a different Member State to the one where they normally operate. In this instance, employers must meet the minimum requirements of worker’s rights in whichever Member State they are sent to.

- **Hypothesis on the impact of digital tools**: the use of digital tools will increase the number of workers posted from Member States with lower social standards to Member States with higher social standards.

- **Selected indicators**: a relevant proxy is employment by industry and occupation by country. Data on number and location of posted workers is also relevant.

**Rationale for rejection of causality**: It is the perception of the stakeholders consulted, as well as the study experts, that the hypothesised impact is not related to the use of digital tools, as companies do not need to be registered in both Member States in order to post workers from one Member State to another.
Target area 2: Legal certainty impacts

**Overarching hypothesis on the impact of digital tools:** The use of digital tools for cross-border direct online company registration leads to a situation where the legal provisions governing the authentication processes of the required documentation do not have the same legal value across Member States, and instead allow for digital authentication methods that are not considered to have the same legal validity.

This target area concerns any issues that might undermine the perception that company law operations, when carried out through less traditional, digital mediums are as legally valid and likely to be authentic, or at least, as easy to ratify as when they had been done using paper. The areas of analysis in this domain will focus on issues surrounding the security and authenticity of legal documents, and how to ensure that in the instance where a document is not submitted in person, it was submitted by the individual who claimed to submit it, and that they had the authority to act on behalf of the company they claimed to represent. The potential impact is presented in the above hypothesis.

Key stakeholders consulted include: lawyers and notaries, as well as business registries, and EU level stakeholders such as BusinessEurope, European Business Register, ETUC and ETUI.

Target area 3: Fraudulent / illegal activities impacts

**Overarching hypothesis on the impact of digital tools:** The use of digital tools for cross-border direct online company registration leads to the facilitation of fraud-related offences (e.g. identity theft, money laundering) as a result of less rigorous authentication control measures when registering a new company, e.g. bypassing the requirement for in-person presence at a local business authority.

Impact 1: the number of illegal activities (listed below) over the last five years in relation to the increase in the use of digital company registration and filing of company information compared to the situation regarding the same crimes conducted using analogue systems in the same Member State.

- **Tax evasion** is the deliberate and illegal non-payment or underpayment of tax; it can relate to any form of tax, which is a legally mandated requirement to the State for earning economic profit. This includes VAT, social security contributions and corporation tax.
- **Financial crime** covers any offence involving fraud, dishonesty or misconduct or misuse of information relating to pecuniary accumulation. Money laundering involves hiding the origin of illegally acquired money and usually involves different bank accounts or shell (fake) companies. The act of defrauding an investor involves providing a prospective investor with incorrect information, which they will use as the basis for their investment decision. Illegitimate investment service vehicles are a more specific instance of defrauding investors.
  - Money laundering;
  - Defrauding investors;
  - Illegitimate investment vehicles (Ponzi and Pyramid schemes etc.);
- **Identity Fraud**
  - Credit card fraud; and
  - Other false accounts.

**Hypothesis on the impact of digital tools:** increasing use of digital tools leads to greater levels of identity fraud and other fraudulent / illegal activities as the need for documents and legal persons to be physically identified decreases.

**Selected indicators:** perception of stakeholders, proxies include the size of the shadow economy and the relative portion of the economy transacted through cash-based payments.

4.4 EU regulatory framework

A collection of Directives constitutes the EU regulatory landscape with regard to the use of digital tools in the context of company law operations. This assessment of the impact of the use of digital
tools in company law operations, in three target areas, should also be understood in the context of the Commission’s announcement, in the work programme for 2017, of an initiative on company law, aimed at facilitating the use of digital technologies throughout a company’s lifecycle and cross-border mergers and divisions. In order to ensure alignment with the Commission’s refit programme the following Regulations and Directives need to be taken into account.

Table 4: Directives establishing the EU-level regulatory framework with regard to the use of digital tools in the context of company law operations, and references to articles presenting directly relevant analyses to the topic of digitalisation of company law.

Relevant Directives and Regulations

- Directive 82/891/EEC of 17 December 1982 based on Article 54 (3) (g) of the Treaty, concerning the division of public limited liability companies;
- Directive 89/666/EEC of 21 December 1989 concerning disclosure requirements in respect of branches opened in a Member State by certain types of company governed by the law of another State;
- Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data;
- Directive 2001/86/EC of the Council of 8 October 2001 complementing the Statute for a European company with regard to the involvement of employees;
- Council Regulation (EC) No1435/2003 of 22 July 2003 on the Statute for a European Cooperative Society (SCE);
- Directive 2009/101/EC of the European Parliament and of the Council of 16 September 2009 on coordination of safeguards which, for the protection of the interests of members and third parties, are required by Member States of companies within the meaning of the second paragraph of Article 48 of the Treaty, with a view to making such safeguards equivalent;
- Directive 2012/30/EU of the European Parliament and of the Council of 25 October 2012 on coordination of safeguards which, for the protection of the interests of members and others, are required by Member States of companies within the meaning of the second paragraph of Article 54 of the Treaty on the Functioning of the European Union, in respect of the formation of public limited liability companies and the maintenance and alteration of their capital, with a view to making such safeguards equivalent;
General analyses of digitalisation in the context of company law operations at the EU level

- In-depth analysis for DG for Internal Policies (2016), *What are the issues relating to digitalisation in company law?*, provides an overview of the current and potential future directions for EU adoption of digital tools\(^\text{28}\).

- Report on digitalisation in company law by the Informal Company Law Expert Group (ICLEG)\(^\text{29}\).


- The Commission has a web portal that allows identification (per Member State) of the time, cost and relevant local authorities in the context of registering a company\(^\text{30}\).

- A comprehensive breakdown of company registration procedures per Member State can be found in the Commission’s Impact Assessment accompanying the Proposal for a Directive of the European Parliament and of the Council on single-member private limited liability companies (2014)\(^\text{31}\).

- Key note address by Věra Jourová, Commissioner for Justice, Consumers and Gender Equality, on Company Law in the Digital Age (2015), highlighting that European and national company law needs to keep pace with technological developments in order to ensure that companies, citizens and authorities fully benefit from the possibilities offered by the Digital Age\(^\text{32}\).


5. Assessment of the availability, use and impacts of digital tools in company law operations

What you will find in this chapter:

Chapter 5 presents a descriptive analysis of the availability and use of digital tools across the 14 Member States under examination (section 5.1) and a descriptive analysis of the qualitative and quantitative data collected on the potential impacts (section 5.2).

Section 5.3 triangulates the information from the previous sections to present assessments of the extent to which digital tools are used for each company law operation in each Member State and the magnitude of the impacts perceived and identified in each impact target area. These assessments are then combined to identify the potential causal links between the use of digital tools for company law operations and the potential impacts.

The main objective of this section is to provide a detailed account of the legal and practical availability of digital tools in the context of the four company law operations across the 14 Member States selected as a focus for this study, i.e. BE, DK, FR, DE, IT, LU, NL, PT, UK, BG, EE, HU, PL, and RO. Specifically, this chapter consists of a comparative assessment of the information collected at the national level and includes data from engagement with key stakeholders. It covers the following aspects:

- The extent to which digital tools are available for each of the four operations;
- Whether this availability is stipulated through legal or other means, and whether it differs for national vs cross-border operations; and
- An identification of the target areas and stakeholders impacted by the use of digital tools per company law operation and per Member State.

In this context, ‘end-to-end’ refers to processes that bypass the need of appearing in person before any authority (e.g. notaries); ‘direct’ refers to processes whereby company founders would have an option to complete the procedure themselves, rather than relying on assistance from intermediaries. For the purpose of this study, the definitions of ‘online’ and ‘offline’ are not conceptually related to the definitions of ‘direct’ and ‘end-to-end’.

5.1 Availability and use of digital tools: Member State overview

The regulatory landscape with regard to the use of digital tools in the four company law operations across the 14 Member States is diverse. Digital tools for company registration and dissolution, filing and sharing of company information, and mergers are made available (or not) through a variety of legal and practical vehicles. The next four sub-sections look to provide an overview of the availability of digital tools across the 14 Member States for each of the four company law operations, as well as the legal frameworks that regulate them. The information provided in this section generally applies to limited liability companies, unless otherwise specifically stated.

5.1.1 Company registration

Company registration operations across the 14 Member States examined are diverse. Likewise, the types of digital tools made available for such operations also vary from country to country. However, all countries allow for the use of digital tools for company registration operations. In some countries (e.g. Portugal and Estonia), these available tools allow for the direct, end-to-end registration of companies, whereas in others (e.g. Germany) intermediaries must handle the electronic systems made available. Figure 2 provides an illustrative overview of the types of digital tools available in this context across the 14 Member States.

As described in Chapter 3 of this report.

N.B. This chapter has been compiled on the basis of the information available to the study team as of 12 May 2017, and therefore does not include data for RO, BG, and DK (i.e. as highlighted in Chapter 2 of this report).

For an in-depth description of the regulatory landscape within each Member State, please see the annexed country fiches (Appendix VI).
Although not a direct, end-to-end process (i.e. dependent on the action of a notary), digital tools are available for company registration in Germany. The notary must make use of the EGVP (Elektronisches Gerichts- und Verwaltungspostfach), an electronic communication platform for court communication. The system makes use of the OSCI 1.2. Internet protocol and is protected through a two-step authentication system. Given that the organisation of the courts is a competence of the Länder, the justice ministries of the different Länder are mandated to set up an electronic system for company registration (i.e. through §8a Abs 2 HGB): each Land issued executive regulation to make the use of EGVP mandatory for company registration. As such, companies are registered in the commercial register (i.e. Handelsregister), which is kept by the registration courts as per §8 Abs. 1 HGB (i.e. Handelsgesetzbuch – Commercial Code). The entries in the register are kept electronically.

In order to initiate the registration process, companies first have to make an application for registration in the commercial register. The registration court decides if all formal requirements are fulfilled and if all necessary information is complete. On successful completion of this stage, the court includes the company in the commercial register (§25 HRV). Registration is obligatory for limited liability companies (i.e. AG, GmbH), which have legal personality. Under §12 HGB, each application for company registration must take place by means of an electronic notarial official certified deed. In practice, this official certified deed is the registration application protocol, which must be drafted by a notary and signed by the company director(s).

The registration application protocol for limited liability companies must be accompanied by official certified copies of the following documents:

- Company contract (which also has the notarial official certified deed);
- A list of directors (i.e. for GmbH) and board members (i.e. AG); and
- A declaration that the directors and/or board members are not prohibited to exercise a profession in the sector of operation and that they have not been convicted of insolvency or economic crimes.

These accompanying documents are electronically transferred to the register court, i.e. as governed by §39a Beurkundungsgesetz, which require that document copies bear the electronic signature of
the notary. The court then proceeds to publicise the entry in the commercial register, by electronic means (§10 HGB and § 27 HRV), on successful completion of the registration process.

In Estonia, the Commercial Code allows company registration operations to be done online through the Company Registration Portal. In order to register a private limited liability company through the portal, individuals must have an Estonian ID-card, allowing for person identification and digital signature authentication. Limited liability companies can be electronically registered in the Business Register if all persons related to the company (e.g. board members, founders, council members) have an Estonian, Latvian, Belgian, or Finnish ID card; Estonian or Lithuanian mobile ID, or Estonian e-Residency card. If the company founders do not have one of these ID-cards, the company must be established through a notary. Submitting an application for company registration consists of five steps: preparation, signing, payment of share capital and state fee, and submission. The share capital and state fee can be paid electronically directly through the portal. Submitted applications are reviewed by the Register within one working day and a status notification is sent via email.

In France, company registration is available through the "centres des formalités des entreprises (CFE)" (i.e. business start-up centres). These CFE are mainly regulated under Articles A. 123-1 and follow the Trade Code Specifically. Article A. 123-3 of the Trade Code provides the security requirements with which the CFE must comply. All required forms must be available in the XML language. All documents provided during the registration process must include a written statement specifying that provided electronic copies are appropriate representations of original documents.

Regarding the registration process itself, individuals looking to register a company can find the necessary forms online; the required information must be filled in and electronic copies of documents provided, followed by an electronic signature of the registration declaration.

In the United Kingdom, the processes underlying company registration as well as the availability of digital tools vary according to the type of company. Private limited companies (i.e. Ltd) can be registered using the Companies House online tool (i.e. Web Incorporation), as long as the company is limited by shares and uses standard articles of association. The online process costs £12 and is usually completed within 24 hours. Additionally, companies can be registered through standard postal registration (which costs £40 and is completed within 8-10 days), through same-day postal registration (which costs £100 and is completed within 24 hours), or through an agent or third-party software. No digital tools are available for registration of the other three types of companies: public limited companies, overseas companies, and European companies; these have to be registered in paper form by post and / or an authorised agent.

In Luxembourg, a sole trader is not subject to the same administrative procedures required for the creation of a company (e.g. drafting articles of association, legalisation by notary). However, if a sole trader engages in commercial activity, he or she will have to register as a natural person by means of electronic filing with the Trade and Companies Register (RCS). The corresponding application must be lodged with a LuxTrust certificate. For limited liability companies (i.e. SARL, SA, SE, SECA), the articles of association must be drawn up before a notary. For unlimited liability companies (i.e. SENC, SECS, cooperative companies, civil companies), the articles of association can be drawn up as a private deed (i.e. without the involvement of a notary) or before a notary.

Before setting up a company, the availability of the envisaged name on the website of the RCS can be verified. Articles of association signed before a notary (i.e. for limited liability companies) must be registered by the notary with the Luxembourg Land Registration and Estates Department within 15 days of signature and then submitted electronically to the RCS within one month. The signature is then published in the electronic compendium of companies and associations (Recueil électronique des sociétés et associations – RESA). The publication in the RESA takes place on the day the articles of association are lodged or at a fixed date, within 15 days after the lodging, chosen by the person requesting the publication. The signatories of articles of association drawn up as private deeds have to file their acts with the RCS for registration and publication in the RESA within a month following the signature.

After registering with the RCS, companies must register for value added tax (VAT) with the Land Registration and Estates Department (i.e. Administration de l'enregistrement et des domaines -

39 The Company Registration Portal can be accessed at https://ettevotjaportaal.riik.ee/
40 The required specifications are available at http://www.pme.gouv.fr/, where the electronic formats in which the required documents must be provided is also specified.
41 A full list of available electronic certificates or signatures is available at the following address: http://www.telecom.gouv.fr/rubriques-menu/entreprises-economie-numerique/certificats-references-pris-v1/categories-families-certificats-references-pris-v1-1-506.html
42 The national statistical institute (INSEE) provides a list of the CFEs, depending on the nature of the companies: https://www.insee.fr/fr/information/1972060
AED). Companies can do this via a secure platform for online administrative procedures (MyGuichet) or by downloading a form.

In **Belgium**, depending on the legal form of the company, applicants may be required to appear before a notary or to complete forms and forward them to the registry or the authorised offices. Company registration in Belgium is generally neither direct nor end-to-end. Moreover, for the main legal forms (i.e. SPRL, SA), it is still mandatory to physically appear before a notary and to register in-person at the registry. For companies with all other legal forms, registration can be carried out using digital tools.

In the **Netherlands**, the use of electronic tools for company registration is high: in most cases of incorporation of limited companies, the company is entered by the notary through an electronic system. The incorporation of limited companies in the Netherlands (i.e. NV, BV, coöperatie) has to be entered in the commercial register (i.e. art. 18 (1) Handelsregisterwet – Company Registration Law). Registration is, however, not a requirement for the validity of the incorporation of a limited company, or for the legal personality of the company. The commercial register is held by the KvK (i.e. Kamer van Koophandel, art 3 Handelsregisterwet), which also organises the entries in the register. Specifically, Art. 3 Handelsregisterbesluit 2008 provides the possibility for the KvK organise the electronic registration of companies. However, no end-to-end company registration is possible. The possibility of end-to-end registration, requested by private individuals (e.g. founding shareholders/directors), is not yet implemented by the KvK, given that no tools for securing online signatures are currently available. This means private individuals wishing to enter a company in the commercial register have to fill out a paper form (available online), which has to be submitted to the KvK by physical means.

The registration of a company by a notary (required for drawing of the company contract) can be filed by electronic means. This electronic registration is done through an online platform: the notary office has to request a certification-key from the notary chamber and a PKI certificate from the government.

Limited companies incorporated in a foreign country but which have a branch in the Netherlands (i.e. cross-border companies), must be entered in the commercial register (art. 5 sec c and d Handelsregisterwet and art 24 and 25 Handelsregisterbesluit). Limited companies that are formally incorporated and have their seat in a foreign country, but which have no factual ties with the country of establishment and whose activities take place in the Netherlands exclusively, are also obliged to register at the commercial register (art. 5 Wet Formeel Buitenlandse Vennootschappen). In similar fashion to non-cross-border companies, the registration of cross-border companies takes place by means of paper forms, and no electronic registrations are possible.

In **Portugal**, it is possible to register a company through an online register service within the Citizen’s Portal. The portal contains an entrepreneur’s desk, a single point of access to services related to business activities. The entrepreneur’s desk is a government initiative whose aim is to create a one-stop internet access point with all relevant information for businessmen, entrepreneurs and business-related services, allowing for various services to be carried out, e.g. starting a business, registering a trademark, obtain certificates. Not all types of companies, however, can be registered online. The legal framework of **Online Company** (Decree-Law 125/2006 of June 29) only allows the constitution, by electronic means of commercial companies and civil companies in commercial form (i.e. private companies limited by quota shares, one-person limited liability companies and public limited companies). In order to register a company online, the applicant must have citizen’s card (i.e. Cartão do cidadão). If the applicant is any nationality other than Portuguese they need to obtain a Fiscal Identification Number from the Portuguese Financial services. Estonian and Spanish citizens can, however, use their national identity card instead.

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43 For these companies, it is not mandatory to register electronically, and still possible to do it physically through the registry of the court of commerce. It is worth noting that in Belgium registration through digital tools is cheaper than physical registration (i.e. 220€ compared to 270€).

44 Based on the primary information provided by a KvK stakeholder.


46 These forms are provided on the website of the KvK: [https://www.kvk.nl/inschrijven-en-wijzigen/wijziging-doorgeven/formulieren-handelsregister/](https://www.kvk.nl/inschrijven-en-wijzigen/wijziging-doorgeven/formulieren-handelsregister/)

47 See manual for the online registration by notaries on the website of the KvK, [https://www.kvk.nl/inschrijven-en-wijzigen/inschrijven-bij-de-kamer-van-koophandel/wie-mag-de-inschrijving-doorgeven/online-registreren-handelsregister-voor-notarijekantoren/gebruikers-online-registreren-notarissen/?alias=registrerennotarissen](https://www.kvk.nl/inschrijven-en-wijzigen/inschrijven-bij-de-kamer-van-koophandel/wie-mag-de-inschrijving-doorgeven/online-registreren-handelsregister-voor-notarijekantoren/gebruikers-online-registreren-notarissen/?alias=registrerennotarissen)

48 The PKI certificate is a digital certificate, issued by government, which gives proof of a person’s or institution’s online identity.

To set up a company in Italy, it is necessary to create a company and then register it. To create a company, the shareholder(s) must produce articles of association of the limited liability company\(^9\), which must be signed as a public deed before a notary\(^1\). There are no digital tools available for creating a company, although it may be conducted without the need of appearing in person at a notary. It is only in the case of "innovative start-ups"\(^2\) that the articles of association need not be signed before a notary\(^3\) and may be signed by the applicant using a digital signature\(^4\). Indeed, this is the only situation in which a direct, end-to-end process in company formation can be carried out.

Once the company has been created, it must be registered with the Business Registry (i.e. Registro imprese)\(^5\), which is maintained by the Italian Chambers of Commerce\(^6\). It is only on registration that a company acquires legal personality\(^7\). Registration can be made by means of filing of a single communication (i.e. Comunicazione unica, "ComUnica"), which is an electronic procedure that has been developed by the Italian Chambers of Commerce and provides for an end-to-end process in company registration. The procedure is complex and most users are likely to require the assistance of an intermediary such as an accountant or tax adviser. Specifically, the ComUnica filing allows for a single registration procedure of a company with the Business Registry, tax and VAT authorities, and social security authorities\(^8\). ComUnica filings can be made by registered users on a dedicated online platform (i.e. Comunica Starweb\(^9\)), which is administered by the Italian Chambers of Commerce. A downloadable software programme is also available for completing the filing off-line (Comunica Impresa\(^10\)). In order to use the ComUnica filing platform or software, users have to (i) obtain an e-mail address (i.e. posta elettronica certificata)\(^11\), (ii) register with the Business Registry to obtain a username and password\(^12\), obtain and set up a smart-card or USB key for making digital signatures\(^13\).

In Poland, applicants looking to register a company can do so in the CEIDG register as an individual company or the National Court Register (KRS) as a company in a form regulated by the Commercial Code. Traditionally, this is done by filling in the paper application and lodging it in the office or court. The applicant can also fill in and submit the application online. An electronic signature or the ePUAP (i.e. Elektroniczna Platforma Usług Administracji Publicznej) are required. If more than five workers

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\(^{50}\) Article 2463 of the Italian Civil Code; see further http://www.notariato.it/en/impresa/contract.<br>A simplified form of srl (società a responsabilità limitata semplificata) is also available for small companies with a share capital of between €1 and €9,999.99. This can only be formed by individuals. Article 2463-bis, para 2, provides for a mandatory form of articles of association. The form has been published in Decree No 138/2012 of the Ministry of Justice (OJ No 189 of 14 August 2012) and cannot be modified. See further http://www.notariato.it/en/impresa/simplified-%E2%80%9Csrl%E2%80%9D.<br>

\(^{51}\) Article 2463, para 2, of the Italian Civil Code.<br>An "innovative start-up" is defined by Article 25 of Decree-Law No 179/2012 (OJ No 245 of 19 October 2012) as a private limited liability company that registered in a special section of the Italian business register and meets the following conditions i) it has been established in the last five years, ii) it has a registered office in any EEA State and a branch or place of business in Italy, iii) it has an annual total turnover not exceeding EUR 5 million, iv) it has not distributed profits, v) its main activity is the development, production or marketing of innovative products or services with a high technological value and vi) it has not been created as a result of a merger, dissolution or transfer of a business. In addition one of the following conditions must be met i) expenditure in research and development must be at least 15% of its turnover, or ii) at least one-third of its employees or consultants must hold a PhD, or iii) custodian, owner or licensee of a patent for an industrial or biotechnology invention; see further http://www.notariato.it/en/impresa/start and http://startup.registroimprese.it/.<br>

\(^{52}\) Article 4(10-bis) of Decree-Law No 3/2015 (OJ No 19 of 24 January 2015).<br>A digital signature is the IT equivalent of a handwritten signature on paper and has the same legal validity. Its function is that of guaranteeing the validity of an electronic document. The rules governing digital signatures are contained in Articles 24-37 of Legislative Decree No 82/2005 also known as the Digital Administration Code (OJ No 112 of 16 May 2005).<br>

\(^{53}\) Article 2330 of the Italian Civil Code.<br>

\(^{54}\) Article 8 of Law No 580/1993 (OJ No 7 of 11 January 1994).<br>

\(^{55}\) Article 2331, para 1, of the Italian Civil Code.<br>See further <https://www.registroimprese.it/comunica[tag=cosa&under-tab=corsi].<br>The online platform is available here: <http://starweb.info.camere.it/starweb/index.jsp>.<br>The software can be downloaded here <https://www.registroimprese.it/en/web/guest/comunica[tag=cosa&under-tab=strumenti].

\(^{56}\) Further information on registering a certified email address can be found here: <https://www.registroimprese.it/documents/10181/10566/qualifiche_comunicazione_pec>. A certified email account must first be obtained from an authorised provider <http://www.agid.gov.it/infrastruttura-sicurezza/pec-elenco-gestori>. Registration may be made online <https://www.registroimprese.it/registra-ri>. The smart-card or USB key must be obtained from an authorised provider <http://www.agid.gov.it/identita-digitale/firme-elettroniche/certificatori-attiv>. The Italian Digital Agency has produced a guide on digital signatures, but this is only available in Italian. <http://www.agid.gov.it/sites/default/files/linee_guida/quida_alla_firma_digitale_2009_a_0_0_0.pdf>.
are employed by the company being registered, an electronic form of communication with the authorities is mandatory.

In Hungary, all electronic documents submitted for registration must be executed by means of qualified electronic signatures and time stamping, where the time stamp must have facilities to verify that the qualified electronic signature was legally valid at the time the signature was executed and the time-stamp was affixed. The application for registration must be submitted in an electronic document to the court of registry of jurisdiction by reference to the company’s registered office, using a form appropriate for the company type in question, and signed by the legal representative, in the manner and with the enclosures prescribed in the Company Act. Additionally, according to the Decree of the Ministry of Justice 24/2006. (V. 18.) on certain aspects of the electronic company registration procedure and the company register, the electronic forms of registration / amendment applications should be sent directly to the email address of the company registration service (as indicated on its website) or through the governmental portal. Legal representation is mandatory with regard to company registration proceedings. Indeed, it is the legal representative’s responsibility to convert into electronic format any documents prepared by others that are to be submitted attached to an application for registration. Participation in e-company law procedures must be approved by the Hungarian Bar Association. Legal representatives need to ensure they have an electronic signature and qualified time stamp service, and an online service which proves the certificate-status (OCSP).

E-Szignó – Microsec Ltd.⁶⁴, a Hungarian-owned company providing a comprehensive range of services based on electronic signature technology, is the largest Hungarian certification provider. Microsec Ltd. qualified trust services such as e-Szignó Signature, Times-Stamp, Seal and Preservation fulfill all requirements defined in Regulation (EU) No. 910/2014 (eIDAS). E-Szignó operates a certificate authority (CA) and provides digital certificates. They offer both qualified certificates for electronic signatures, and advanced (non-qualified) certificates for advanced electronic signatures, encryption, user authentication, etc. They also operate a time stamping authority that provides qualified timestamps that can prove that a certain document existed at a given time. The activity of E-Szignó is supervised by the Hungarian National Media- and Communications Authority.

The company registration service inspects the electronic documents for technical aspects (authenticity of electronic signatures, data integrity, date and authenticity of time stamp, electronic document format). If the application for registration (amendment notification) conforms with the technical regulations, the company information service forwards it to the competent court of registry, which confirms receipt if it complies with the requirements set out in the company Act. This is done electronically, or by sending an electronic certificate to the applicant’s legal representative if there is an amendment notification.

A comparative summary outlining the similarities and differences with regard to the availability of digital tools for company registration operations across the Member States is provided in Table 5. The Member States are ordered in terms of the availability of digital tools with the most advanced at the top.

Out of the 14 Member States included in the scope of this study, six currently have digital tools in place that allow for direct, end-to-end company registration operations, namely EE, PT, PL, DK, UK, FR. Seven Member States also allow for the use of digital tools in the context of company registration operations, but not in a direct or end-to-end manner, namely IT, DE, NL, BG, LU, HU, BE⁶⁵. In these Member States, intermediaries are usually required for registering limited liability companies through digital tools.

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⁶⁴ https://e-szigno.hu/

⁶⁵ The availability of digital tools for company registration operations in Romania was found to be limited in comparison to the other 13 Member States.
Table 5: Comparative summary of the availability of digital tools for company registration across the 14 Member States included in the scope of this study.

<table>
<thead>
<tr>
<th>Member State</th>
<th>Availability of digital tools for company registration</th>
<th>Electronic platforms available for the registration of limited liability companies</th>
<th>Intermediaries required</th>
<th>Summary of the registration process for limited liability companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estonia</td>
<td>Digital tools are available for company registration.</td>
<td>Companies can be registered directly through the Company Registration Portal, available online at: <a href="https://ettevotjaportal.rik.ee/">https://ettevotjaportal.rik.ee/</a></td>
<td>No intermediaries are required. The electronic company registration process can be carried out in a direct, end-to-end manner.</td>
<td>For the registration of limited liability companies through the Company Registration Portal, the applicant needs to be in possession of an Estonian ID-card (Latvian, Belgian, Finnish, and Lithuanian ID cards or mobile IDs are also acceptable) for identification and digital signature authentication purposes.</td>
</tr>
<tr>
<td>Portugal</td>
<td>Digital tools are available for company registration.</td>
<td>In Portugal, companies can be created and registered through an online register service within the wider electronic platform known as Citizen’s Portal, at: <a href="https://www.portaldocidadao.pt">https://www.portaldocidadao.pt</a></td>
<td>No intermediaries are required. The electronic company registration process can be carried out in a direct, end-to-end manner.</td>
<td>In order to create and register a limited liability company through the Citizen’s Portal, the applicant(s) must have a Citizen’s Card (i.e. Portuguese national ID card). Applicants of a nationality other than Portuguese have to obtain a Fiscal Identification Number from the Portuguese Financial Services Authority. Estonian and Spanish nationals can use their corresponding ID cards and are exempt from this pre-requisite.</td>
</tr>
<tr>
<td>Poland</td>
<td>Digital tools are available for company registration.</td>
<td>Limited liability companies can be registered directly online through a web portal, i.e. S24 / ePUAP. This must be preceded by online registration on the website of the Ministry of Justice, i.e. eMS.</td>
<td>No intermediaries are required. The electronic company registration process can be carried out in a direct, end-to-end manner.</td>
<td>The Polish Commercial Companies Code provides for the possibility to register limited liability companies in a simplified manner (i.e. S24), without the need of intervention by a notary. However, there is one exception to this provision: if the share capital contribution to a company is to be made as a non-cash contribution, the company registration process must be carried out in the traditional manner, that is signing a notary act.</td>
</tr>
<tr>
<td>Denmark</td>
<td>Digital tools are available for company registration.</td>
<td>A direct online solution provided by the Danish Business Authority is available for the registration of companies (including limited liability companies) can only be accessed</td>
<td>No intermediaries are required. The electronic company registration process</td>
<td>The online solution provided by the Danish Business Authority for the registration of companies (including limited liability companies) can only be accessed</td>
</tr>
</tbody>
</table>

Listed according to the extent to which direct and end-to-end digital tools are available for company registration operations.
<table>
<thead>
<tr>
<th>Member State</th>
<th>Availability of digital tools for company registration</th>
<th>Electronic platforms available for the registration of limited liability companies</th>
<th>Intermediaries required</th>
<th>Summary of the registration process for limited liability companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>Digital tools are available for company registration.</td>
<td>Registration of limited liability companies at: <a href="https://www.virk.dk/">https://www.virk.dk/</a></td>
<td>Can be carried out in a direct, end-to-end manner.</td>
<td>Limited liability companies can only be registered using the Companies House online tool for companies limited by shares and if they are using standard articles of association. The online registration process is considerably cheaper and can be concluded in up to 24 hours.</td>
</tr>
<tr>
<td>France</td>
<td>Digital tools are available for company registration.</td>
<td>In the UK, limited liability companies can be registered using the Companies House online tool (i.e. Web Incorporation).</td>
<td>No intermediaries are required. The electronic company registration process can be carried out in a direct, end-to-end manner.</td>
<td>In France, a person wishing to register a company needs to provide information through the CFE online portal, which then transmits the full file to the registry of the concerned commercial court or chamber of handicraft. The verification of the files is then performed either by the online portal (i.e. the CFE) or by the registry of the commercial court or chamber of handicraft. The CFE also transmits the file to the concerned authorities, in particular the tax and social contributions authorities.</td>
</tr>
<tr>
<td>Italy</td>
<td>Digital tools are available for company registration but not for company formation.</td>
<td>Company registration can be made through the filing of a single communication through the ComUnica system, an electronic procedure developed by the Italian Chambers of Commerce.</td>
<td>Intermediaries are required for the creation of limited liability companies, that is articles of association must be signed as a public deed before a notary. However, company registration can be done electronically in an end-to-end manner.</td>
<td>In Italy, company registration must be preceded by company creation. For limited liability companies, the company creation process cannot be carried out electronically, and requires signing the articles of association as a public deed before a notary. Conversely, the company registration process can be carried out electronically in a direct, end-to-end fashion using the ComUnica system, as long as applicants are in possession of a (i) certified email address (i.e. posta elettronica certificate), (ii) a...</td>
</tr>
</tbody>
</table>

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67 In Italy, company registration must be preceded by company creation, a process through which the applicant(s) / shareholder(s) produce articles of association, which must be signed as a public deed before a notary. This is directly applicable to limited liability companies. (WHY IS THIS HERE?)

<table>
<thead>
<tr>
<th>Member State</th>
<th>Availability of Digital Tools for Company Registration</th>
<th>Electronic Platforms Available for the Registration of Limited Liability Companies</th>
<th>Intermediaries Required</th>
<th>Summary of the Registration Process for Limited Liability Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Germany</strong></td>
<td>Digital tools are available for company registration, but have to be used by notaries rather than applicants.</td>
<td>In Germany, company registration through digital tools takes place through the <em>Elektronisches Gerichts-und Verwaltungspostfach</em> (EGVP), and can only be handled by notaries. The EGVP is an electronic communication platform for court communication.</td>
<td><strong>Intermediaries are required</strong> for the registration of limited liability companies, i.e. notaries have to file all the required documentation for registering a company in the EGVP platform. The process, therefore, cannot be considered to be direct or end-to-end.</td>
<td>Registration of limited liability companies in Germany requires the intervention of a notary for filing the necessary documentation through the EGVP platform. In addition, applicants must provide further official certified copies of specific documentation in order to initiate the process, e.g. the list of directors, the company contract.</td>
</tr>
<tr>
<td><strong>Netherlands</strong></td>
<td>Digital tools are available for company registration, but have to be used by notaries rather than applicants.</td>
<td>The registration of limited liability companies can only be filed electronically by a notary. This electronic registration takes place through the use of an online platform hosted by the KvK (<em>Kamer van Koophandel</em>, i.e. Chamber of Commerce).</td>
<td><strong>Intermediaries are required</strong> for the registration of limited liability companies, i.e. notaries have to file all the required documentation for registering a company in the <em>electronic</em> platform hosted by the KvK. The process, therefore, cannot be considered to be direct or end-to-end.</td>
<td>In order to proceed with the electronic company registration process, notary offices must request a certification key from the notary chamber and a PKI certificate from the KvK, i.e. a digital certificate providing proof of a person’s or institution’s online identity. Additionally, no electronic registration is possible for cross-border company registration, and the whole process must be carried out through paper forms. Applicants must also provide further official certified copies of specific documentation in order to initiate the process, e.g. the list of directors, the company contract.</td>
</tr>
<tr>
<td><strong>Bulgaria</strong></td>
<td>Digital tools are available for some aspects of registration of limited liability companies, namely the electronic submission of documentation after</td>
<td>In Bulgaria, limited liability companies can be registered using the electronic system of the Commercial Register, which is maintained by the Registry Agency, upon acceptance of the</td>
<td><strong>Intermediaries are required</strong> for the registration of limited liability companies. Applicants must appear before a Registry Agency and submit a request form for registering a new company.</td>
<td>The entire process of online company registration is carried out before the Registry Agency, after acceptance of the initial request form. The electronic platform hosted and operated by the Commercial Register is widely used in Bulgaria, but can only be accessed for lodging an official registration upon acceptance of this form.</td>
</tr>
<tr>
<td>Member State</td>
<td>Availability of digital tools for company registration</td>
<td>Electronic platforms available for the registration of limited liability companies</td>
<td>Intermediaries required</td>
<td>Summary of the registration process for limited liability companies</td>
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<td>---------------------------------------------------------------------</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>Digital tools are available for some aspects of company registration, but have to be used by notaries rather than applicants</td>
<td>The registration of limited liability companies can only be filed electronically by a notary. This electronic registration takes place through the use of an online platform hosted by the Trade and Companies Register (RCS) using a digital tool called LuxTrust certificate.</td>
<td>Intermediaries are required for the registration of limited liability companies, i.e. notaries have to file all the required documentation for registering a company in the electronic platform hosted by the RCS. The process, therefore, cannot be considered to be direct or end-to-end.</td>
<td>The articles of association must be drawn up before a notary in order to register a limited liability company in Luxembourg. Any further lodging of documentation in the online platform hosted by the RCS has to be handled by the notaries directly. Additionally, notarised acts must first be submitted for registration by the notary in original paper format. The notary is then required to electronically submit the deed to the RCS for publication at the latest one month after the signature of the articles of association.</td>
</tr>
<tr>
<td>Hungary</td>
<td>Digital tools are available for some aspects of company registration, but have to be used by notaries or lawyers representing the applicant(s)</td>
<td>In Hungary, all the required documentation necessary for registering a company can be pooled together in an E-acta. Electronic documents must be authenticated by means of qualified electronic signatures and time stamping (e.g. E-Szignő). However, legal representation is necessary to carry out these processes.</td>
<td>Intermediaries are required for the registration of limited liability companies, i.e. legal representatives of the applicant have to file all the required documentation for registering a company in the court of registry of the appropriate jurisdiction. The process, therefore, cannot be considered to be direct or end-to-end.</td>
<td>All the documentation submitted to County Courts must be countersigned by an attorney who possesses the required digital signature and time-stamp platforms. Legal representation is mandatory with obligatory technical safeguards. However, the process itself is entirely digitalised.</td>
</tr>
<tr>
<td>Belgium</td>
<td>Digital tools are not available for registration of limited liability companies, as applicants seeking to register a new company are required to physically appear before a notary and a registry court.</td>
<td>No electronic platforms available for the registration of limited liability companies.</td>
<td>Intermediaries are required for the registration of limited liability companies, i.e. applicants are required to appear in-person at the registry and before a notary. The process, therefore cannot be considered to be direct or end-to-end.</td>
<td>For the main legal forms (including SPRL and SA), it is necessary for founders to physically appear before a notary and to register in person at the registry.</td>
</tr>
</tbody>
</table>
### Summary of the registration process for limited liability companies

<table>
<thead>
<tr>
<th>Member State</th>
<th>Availability of digital tools for company registration</th>
<th>Electronic platforms available for the registration of limited liability companies</th>
<th>Intermediaries required</th>
<th>Summary of the registration process for limited liability companies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Romania</strong></td>
<td>Digital tools are mostly not available for registration of limited liability companies, as applicants seeking to register a new company are required to physically appear before a notary and a registry court.</td>
<td>The submission of most company registration documentation requires the intervention of a notary. However, the submission of some information can be done using digital tools.</td>
<td><strong>Intermediaries are required</strong> for the registration of limited liability companies, i.e. applicants are required to appear in-person at the registry and before a notary. The process, therefore, cannot be considered to be direct or end-to-end.</td>
<td>Applicants seeking to register a new company are required to physically appear before a notary and a registry court as part of the verification process. This allows the verification of the identity of the founder(s), the availability of the company name and the drafting, signature and certification of the relevant registration documents (e.g. articles of association / instruments of constitution etc.)</td>
</tr>
</tbody>
</table>
5.1.2 Filing and disclosure of company information

Filing and disclosure of company information is a diverse process across the 14 Member States. The type of digital tools made available for such operations also vary from country to country. However, all countries allow for some form of digital tool for filing and disclosure of company information. In some countries, this can be done through a dedicated online portal (e.g. Portugal, Estonia), whereas in others it requires input from the commercial registries (e.g. Luxembourg, Netherlands). A breakdown of the main characteristics regarding the use of digital tools for filing and disclosure of company information is provided below.

In **Germany**, an official deed by a notary, which is transferred by electronic means, is required for the entry of certain company information in the commercial register. Generally, the same rules and procedures as for the registration of companies are applicable (see 5.1.1). The disclosure of company information stored in the commercial register is possible by electronic means (§9 HGB): different German states have set up a common portal for the disclosure of company information (i.e. https://www.handelsregister.de/rp_web/welcome.do). Additionally, the **Unternehmensregister**, a central commercial database, contains information about different commercial databases, including the commercial register (§8b HGB). The **Unternehmensregister** discloses annual financial statements, submitted according to §325 HGB. The annual filing of financial statements, under §325 HGB, is carried out by electronically transferring the information to the Bundesanzeiger Verlag. For this purpose, the Bundesanzeiger Verlag has set up an online platform: companies must submit their annual financial statements in PDF, Word or Excel formats. In summary, filing and disclosure of company information in Germany take place through two channels: firstly, certain information is entered into the commercial register; secondly, certain information must be submitted to the publisher of the Bundesanzeiger (Official Federal Publication Gazette). This information will be, subsequently, made public on the online **Unternehmensregister** (i.e. business register).

In **Estonia**, the same portal used for company registration (see 5.1.1) also allows for the submission of company information, e.g. amendments to the data entered into the Business Register, or filing of annual reports, which can be done online by using the standardised form. Companies have a single unified reporting environment that makes it convenient to enter and submit data. During the preparation of the annual report, the e-reporting environment verifies whether the required forms and fields are appropriately filled in. In addition, the registry department (i.e. the Business Registry) verifies the submitted report itself. If the registry department finds that the report needs to be supplemented, or if the submitter wishes to correct the report after having submitted it, then a repeat report can be submitted via the e-reporting environment as well. Only shareholders or management board members who hold an Estonian ID-card can submit the annual reports online.

In **France**, filing and disclosure of information is carried out by the registry of the competent commercial court at the submission or modification of the relevant information concerning a company. The information may be disclosed online through an internet address. Available information concerning commercial companies includes the following: the name of the registry where the company is registered, the legal nature of the company, its name, logo and sign, the identification number, the amount and currency of the share capital, its address, its age, the date of registration, the ‘NAF’ number (i.e. the Nomenclature d’Activité Française), the detailed activity of the company, the address of the main establishment, the function, name, date of birth, place of birth, nationality and address of the main executive of the company, of its administrators and auditor.

In the **United Kingdom**, Directive 2009/101/EC is transposed in part by the Companies Act 2006. Section 1078 of the Companies Act 2006 sets out the documents that are subject to the requirements of Article 3 of that Directive. Table 6 shows the limited documents that can be submitted electronically. In addition, WebChek is a publicly-available database whereby users can search for and view company information.

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68 The **Unternehmensregister** can be consulted online on the following website: https://www.unternehmensregister.de/ureg/

69 Available at https://publikationsplattform.de/sp/wexxservlet?session.sessionid=6dc5da8fd221fbc1d461bfb31c2d04_b667&page.navid=to_start&global_data.designmode=pp#b

70 Foreign shareholders and board members who wish to submit the annual company reports must obtain an Estonian ID Card. Company accountants may also enter the data, but a management board member needs to sign the accounts digitally in order to submit them to the Business Registry.

71 Available at https://www.info greffe.fr.

### Table 6: Availability of digital tools for filing and disclosure of company information in the UK.

<table>
<thead>
<tr>
<th>Type of information</th>
<th>Availability of digital tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changes to a company’s constitution</td>
<td>No – paper only</td>
</tr>
<tr>
<td>Change of company name</td>
<td>Yes – WebFiling</td>
</tr>
<tr>
<td>Procedure: Companies House will normally process a standard electronic change of name application within 24 hours at a cost of £8. There is also a Same Day service at £30. Alternatively, paper applications take up to five working days from receipt and cost £10. The paper Same Day service is £50.</td>
<td></td>
</tr>
<tr>
<td>Details of those authorised to represent the company in dealings with third parties and legal proceedings, as well as those who administer, supervise and control the company</td>
<td>Yes – WebFiling73</td>
</tr>
<tr>
<td>Procedure: removing a director requires passing a motion,74 a copy of which must be submitted to Companies House.75 The submission of changes in the details of authorised persons generally is made through the Companies House WebFiling tool.</td>
<td></td>
</tr>
<tr>
<td>The complete text of the constitution as amended</td>
<td>No – paper only</td>
</tr>
<tr>
<td>The capital subscribed</td>
<td>Yes – WebFiling</td>
</tr>
<tr>
<td>Procedure: This would be submitted with the Confirmation Statement through the WebFiling service. It costs £13 to submit it online, and £44 by post.76 It is due annually from the time the company was incorporated or the date the last Confirmation Statement was filed.</td>
<td></td>
</tr>
<tr>
<td>Appointment of a liquidator</td>
<td>No – paper only</td>
</tr>
<tr>
<td>Termination of a liquidation</td>
<td>No – paper only</td>
</tr>
<tr>
<td>Winding up of a company</td>
<td>No – paper only</td>
</tr>
<tr>
<td>Accounting documents</td>
<td>Yes – gov.uk.</td>
</tr>
<tr>
<td>Procedure: Company accounts and tax returns can be submitted using the online gov.uk site to HMRC, Companies House or both.77 However, companies seeking to submit accounts to Companies House must use commercial software if the company’s turnover is more than £6.5 million. Similarly, submitting a Company Tax Return to HMRC must be submitted with commercial software if turnover is more than £632,000.78</td>
<td></td>
</tr>
</tbody>
</table>

73 https://www.gov.uk/make-changes-to-your-limited-company/directors-and-company-secretaries,
76 https://www.gov.uk/running-a-limited-company/company-annual-return
77 https://www.gov.uk/file-your-company-accounts-and-tax-return
78 https://www.gov.uk/file-your-company-accounts-and-tax-return
<table>
<thead>
<tr>
<th>Type of information</th>
<th>Availability of digital tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changes to the registered office</td>
<td>Yes – WebFiling, or third-party software. Alternatively, the filing can be made on paper.</td>
</tr>
<tr>
<td>Striking off of the company and any declaration of nullity by the courts</td>
<td>No – paper only. However, a digital tool (WebFiling) can be used to withdraw an application to strike off a company.</td>
</tr>
</tbody>
</table>

In **Luxembourg**, companies lodge their consolidated articles of association with the RCS in case of an amendment. The filing of accounts only becomes legally binding on third parties after their publication in the RESA: this is done through an online submission to the RCS\(^7\). Once the lodging has been processed, the documents submitted (which now carry a virtual label providing proof of lodging with the RCS) can be downloaded in the personal eSpace made available to the applicant on the website of the RCS (i.e. in the “mes commandes” section).

Public limited company (SA) directors must request the publication of the notice of the meetings in the RESA by filing them with the RCS. This can be done through an online submission to the RCS. For unlisted public limited companies, the body that convenes the meeting must have notices of general meetings published at least 15 days before the general meeting in the RESA, by lodging the notice with the RCS. However, if all the shares are registered shares, the notices of meetings must be sent by registered mail only, eight days prior to the meeting at the latest without the requirement of being published in RESA. For public limited companies listed on the stock exchange, the body that convenes the meeting must have notices of general meetings published at least 30 days before the meeting at the RESA, by previously lodging the notice with the RCS. Notices for general meetings must be lodged with the RCS for publication in the RESA, making sure the dates on which the publication must be made are indicated. Where all the shares are registered, the company does not need to publish the notice of a general meeting in the RESA. Once a request to publish the convocation is accepted by the RCS, the applicant will receive a receipt in electronic format.

In addition, Luxembourgian businesses are required to produce annual accounts in accordance with the standard chart of accounts (i.e. SCA, *Plan Comptable Normalisé* - PCN). All Luxembourgian companies must prepare and approve the accounts in electronic format on the platform for electronic gathering of financial data (i.e. *Plateforme électronique de Collecte des Données Financières* – eCDF) before their electronic filing with the RCS. The same applies for subsidiaries. The structured and harmonised financial data is archived and stored in an electronic balance sheet database by the Central Balance Sheet Unit (i.e. *Centrale des bilans*). Some businesses are not subject to the SCA (e.g. namely persons established as sole traders, partnerships (SENC) and limited partnerships (SECS) with a turnover below EUR 100,000 excl. VAT), and they can file their accounts online with the RCS without having to use the eCDF. Businesses subject to the SCA must prepare their accounting package (i.e. balance sheet, profit and loss accounts and trial balance in accordance with the SCA) on the eCDF platform: either by using the dedicated data collection forms in PDF format or by transferring the XML/XBRL files to the eCDF platform. The eCDF platform carries out arithmetic checks to validate the financial data entered. Only the structured data consisting in the balance sheet, the profit and loss accounts and the trial balance will be approved on the eCDF platform. Non-structured data (appendixes to the financial accounts, management report, audit report, filing notification, etc.) are to be filed directly in PDF/A format with the Trade and Companies Register. On approval of the financial data on the eCDF platform, businesses must file the accounting package (i.e. structured financial data and other non-structured data) electronically with the RCS. The RCS will then automatically collect the financial data from the eCDF platform. The structured and harmonised financial data will be archived and stored by the Central Balance Sheet Unit (i.e. *Centrale des bilans*).

In **Belgium**, companies can modify minor information (e.g. contact data, address, etc.) directly through an online application on the national database. However, companies are not allowed to manage the filing and disclosure of substantial data directly. Companies must complete the appropriate paper forms via the notaries, the registry of the court of commerce and the authorised

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\(^7\) Applicants file their consolidated articles of association, in a PDF/A format, online with the RCS via a LuxTrust certificate at the latest one month after the articles of association have been signed. The payment of this process is usually carried out online, but may exceptionally be made by cash at the registration helpdesk. After the lodging, the applicant will receive a receipt in electronic format.
offices. These intermediaries then perform the changes electronically by also making use of the national commercial database.

In the Netherlands, the disclosure of annual financial statements is through electronic means (art. 2:394 Civil Code; art 19a Handelsregisterwet and art 2 Besluit elektronische deponering handelsregister) (i.e. order on electronic deposits in the commercial register). For disclosure of annual financial statements the relevant information must be submitted through different systems according to the company’s size: micro, small and medium enterprises must disclose the annual financial statement online, via the website of the KvK80. For the financial years 2017 (for medium enterprises) and 2018 (for large enterprises), it will be mandatory to file the financial statements through Standard Business Reporting (SBR). SBR is a standard, used by the Dutch government, for an efficient electronic exchange of business information. In order to use SBR companies must have a dedicated software package that includes a PKI certificate81. In summary, with the exception of large enterprises, all filings of the financial statements take place by electronic means. The KvK then makes the filed financial statement public on its website upon request (art 22 art 24 Handelsregisterwet)82.

Foreign-based companies trading or registered in the Netherlands must also disclose their annual financial statements to the KvK (art 5 Wet Formeel Buitenlandse Vennootschappen). The disclosure of the annual financial statements of a cross-border company takes place according the requirements of the country of incorporation83. Cross-border and formally foreign companies do not fall under the scope of the Besluit elektronische deponering handelsregister (art 4 of this order), and consequently are not obliged to do annual financial statements electronically.

In addition, the KvK discloses basic company information by electronic means, which is entered in the commercial register during the company registration stage (art 24 Handelsregisterwet). This basic company information includes the legal form, the company’s address, the name of the directors, board members, leading managers and the name of the shareholders in a BV (art 21 Handelsregisterwet).

In Portugal, a new publication system for the acts of companies was created under Decree-Law N°76A/2006, of 29 March, abolishing the previous requirements of publishing company acts in the IIIª Série (3rd Series) of Diário da República (the Portuguese Official Gazette): the publication is now online at a site created for this specific purpose (http://publicacoes.mj.pt/index.aspx). The new publication system applies to all companies since 1 January 2006, and since 31 October 2007 it also applies to associations and foundations. With the adoption of this new system, it is now possible to publish information immediately (i.e. without a waiting period). As per the Ministry of Justice website, over 20,000 corporate notices are now published each month, thus illustrating the importance of this process.

Another digital tool relates to the possibility of online filing and submission of annual accounting, tax and statistical data; this is done using a single online form, the Simplified Business Information return or IES (available at www.ies.gov.pt). It allows businesses to combine four legal obligations that had previously been dispersed over various Public Administration services into a single electronic act. As a consequence, companies are no longer required to provide the same information on their annual accounts four times, to four different entities - Ministry of Justice, Ministry of Finance, Portuguese Central Bank and Statistics Portugal (INE)84 and without the need of intervention of public conservatories. The charges associated to these services can be paid in ATMs or through home-banking services. After payment, the act is registered and published automatically at http://publicacoes.mj.pt/ and the company is issued with a permanently updated commercial registration certificate.

80 Companies are required to possess a Eherkenning certificate for this. The Eherkennig-system is an accessible online multi-purpose login tool that allows checking the online identification of a person.
81 See website government authority for SBR: https://www.sbr.nl.nl.
82 On request, it is possible for interested third persons to have disclosure of the financial statements. The KvK can provide electorally (RIGHT WORD?) also certified documents of the statements. All disclosers of the financial statements are made by electronic means.
In **Italy**, companies are required to maintain accounting records⁸⁵ and registers relating to resolutions adopted by the shareholders, directors and any statutory auditors⁹⁶. Companies are also required to adopt an annual financial report⁹⁷ comprising a balance sheet, a profit and loss account and explanatory notes⁹⁸, as well as a report from the directors⁹⁹. The filing of the annual financial report can be done digitally on a dedicated online platform (i.e. **Telemaco**⁹⁰) administered by the Italian Chambers of Commerce. Separate digital tools are available for filing VAT returns, corporate tax returns and social security returns³¹. In addition, company information is made available on the website of the Business Registry (i.e. **registro imprese**) which is maintained by the Italian Chambers of Commerce⁹². A simple free search allows users to obtain basic company information (e.g. name, registered office, sector of activity and certified email address). Detailed company information is also available but requires registration⁹³ and incurs payment of a fee.

In **Poland**, only general company information is disclosed by the companies through digital tools: as a general rule, the information is published by national registers and made available online. In line with Polish law, public administrative authorities are essentially entitled to require the submission of the original versions of documents. In practice, the Central Registration and Information on Economic Activity (CEIDG) includes information on entrepreneurs exercising their activity in Poland: it can be used through the search engine available at www.firma.gov.pl⁹⁴. In addition, the National Court Register (KRS) also contains information on entrepreneurs, associations, other social and professional organisations, foundations and independent public health care. Access to data on the KRS is free of charge – the search tool is available at www.ems.ms.gov.pl.

In **Hungary**, all the provisions applicable to company registration (see 5.1.1) are also applicable to filing and disclosure of company information.

A comparative summary outlining the similarities and differences with regard to the availability of digital tools for the filing and disclosure of company information across the Member States is provided in Table 7. The Member States are ordered in terms of the availability of digital tools with the most advanced at the top.

Out of the 14 Member States included in the scope of this study, six currently have digital tools in place that allow for direct, end-to-end filing and disclosure of company information operations, namely EE, PT, PL, DK, IT, UK⁹⁵. Moreover, out of the remaining Member States, DE, NL, BG, FR, LU, HU, BE also allow for the use of digital tools in the context of filing and disclosure of company information operations, but not in a direct or end-to-end manner. In these Member States, intermediaries are usually required for filing and disclosing information on limited liability companies through digital tools.

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⁸⁵ Article 2214, para 1, of the Italian Civil Code requires companies to maintain a ledger and inventory record. Article 2214, para 2, of the Italian Civil Code also requires a company to maintain other accounting records dependent upon the size and nature of the company including both incoming and outgoing invoices and correspondence relating to it. However, small companies are exempt from this requirement pursuant to Article 2214, para 3, of the Italian Civil Code.

⁸⁶ Article 2478 of the Italian Civil Code.

⁸⁷ Article 2478-bis of the Italian Civil Code, which refers back to Articles 2423 to 2431.

⁸⁸ Article 2423 of the Italian Civil Code.

⁸⁹ Article 2428 of the Italian Civil Code.

⁹⁰ The online platform is available here <http://webtelemaco.infocamere.it>

⁹¹ See further http://www.agenziaentrate.gov.it/wps/content/Nslib/Nsi/Home/CosaDevFare/Versare/F24/SW+Compilazione+ F24/

⁹² The basic company search function can be accessed here <https://www.registroimprese.it/en/web/guest/ricerca-libera-e-acquisto>

⁹³ Registration can be made here <https://registroimprese.infocamere.it/en/login?landingPage=ri.cerca>

⁹⁴ For a full list of data subject to entry in CEIDG please refer to the attached Poland country fiche in Annex V.

⁹⁵ A comprehensive list of which documentation can be filed electronically in the UK is provided in Table 6.
Table 7: Comparative summary of the availability of digital tools for filing and disclosure of company information across the 14 Member States included in the scope of this study.

<table>
<thead>
<tr>
<th>Member State</th>
<th>Availability of digital tools for filing and disclosure of company information</th>
<th>Electronic platforms available for filing and disclosure of company information</th>
<th>Intermediaries required</th>
<th>Summary of the filing and disclosure of information process for limited liability companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estonia</td>
<td>Digital tools are available for filing and disclosure of company information.</td>
<td>Companies can file annual reports and disclose company notices directly through the e-reporting environment at the Company Registration Portal, available online at: <a href="https://ettevotjaportaal.rik.ee/">https://ettevotjaportaal.rik.ee/</a></td>
<td>No intermediaries are required. The electronic process for filing and sharing company information can be carried out in a direct, end-to-end manner.</td>
<td>When filing annual reports, the e-reporting environment available in Estonia’s Company Registration Portal verifies whether the required forms and fields are adequately completed. Companies can input the data directly from accounting themselves. However, if an accountant submits the data, the shareholders or management board members who hold an Estonian ID-card need to sign the accounts digitally in order for the information to be forwarded to the Business Registry.</td>
</tr>
<tr>
<td>Portugal</td>
<td>Digital tools are available for filing and disclosure of company information.</td>
<td>In Portugal, companies can publish notices in the Portuguese Official Gazette directly through a website, available at: <a href="http://publicacoes.mj.pt/Index.aspx">http://publicacoes.mj.pt/Index.aspx</a> Companies can directly file accounting, tax and statistical data directly through another dedicated website, available at: <a href="http://ies.gov.pt">http://ies.gov.pt</a></td>
<td>No intermediaries are required. The electronic process for filing and sharing company information can be carried out in a direct, end-to-end manner.</td>
<td>The two electronic platforms available in Portugal for filing and sharing of company information allow for direct, end-to-end publication of company notices in the Portuguese Official Gazette and filing of tax, statistical, and accounting information that would otherwise have to be submitted to four different entities, i.e. Ministry of Justice, Ministry of Finance, Portuguese Central Bank, and Statistics Portugal (INE).</td>
</tr>
<tr>
<td>Poland</td>
<td>Digital tools are available for filing and disclosure of company information.</td>
<td>There are three electronic platforms in Poland that allow for filing, sharing and browsing of all public company information: (i) the electronic search tool and website of the National Court Registers, which contains information on legal entities; (ii) E-publications portal of Court and Business Gazette websites, which contain information on announcements of legal entities</td>
<td>No intermediaries are required. The electronic process for filing and sharing company information can be carried out in a direct, end-to-end manner.</td>
<td>In Poland, a broad scope of company information can be disclosed using digital tools. However, according to Polish Law, public administrative authorities are entitled to require the submission of the original documents. The process is detailed in the third column from the left.</td>
</tr>
<tr>
<td>Member State</td>
<td>Availability of digital tools for filing and disclosure of company information</td>
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<tr>
<td><strong>Denmark</strong></td>
<td>Digital tools are available for filing and disclosure of company information.</td>
<td>All the required information with regard to company registration, dissolution, and mergers can be filed and disclosed in a direct online solution provided by the Danish Business Authority: <a href="https://www.virk.dk/">https://www.virk.dk/</a></td>
<td>No intermediaries are required. The electronic process for filing and disclosure of company information can be carried out in a <strong>direct, end-to-end manner</strong>.</td>
<td>The online solution provided by the Danish Business Authority for the registration of companies (including limited liability companies) can only be accessed through a digital key known as <em>NemID</em>, which can be obtained by creating a login at <a href="http://www.virk.dk">www.virk.dk</a>. The process is 'self-service'-oriented, with clear guidance at every step of the company registration process. The same online portal can be used for filing and disclosure of all necessary company information in the context of registration, dissolution and mergers.</td>
</tr>
<tr>
<td><strong>United Kingdom</strong></td>
<td>A breakdown of the availability of digital tools for filing and disclosure of company information in the UK is provided in <em>Table 6</em>.</td>
<td>An overview of the electronic platforms available for filing and disclosure of company information in the UK is provided in <em>Table 6</em>.</td>
<td>An overview of the intermediaries required for filing and disclosure of company information in the UK is provided in <em>Table 6</em>.</td>
<td>A summary of the information filing and disclosure process in limited liability companies in the UK is provided in <em>Table 6</em>.</td>
</tr>
<tr>
<td><strong>Italy</strong></td>
<td>Digital tools are available for filing and disclosure of company information.</td>
<td>Disclosure of company information is done directly through the website of the Business Registry (<em>Registro imprese</em>), which is maintained by the Italian Chambers of Commerce and a digital tool – Telemaco – exists for filing of the annual financial report.</td>
<td>No intermediaries are required. The electronic process for filing and disclosure of company information can be carried out in a <strong>direct, end-to-end manner</strong>.</td>
<td>In Italy, companies can file annual reports in a direct, end-to-end manner by using the electronic platform Telemaco. Company information can also be disclosed (i.e. other than VAT numbers and date of incorporation) in a direct, end-to-end fashion, but through the website of the Business Registry.</td>
</tr>
<tr>
<td><strong>Germany</strong></td>
<td>Digital tools are available for filing and disclosure of company information.</td>
<td>In Germany, filing and sharing of company information takes place through two channels: (i) <strong>Intermediaries are required</strong> for the filing and sharing of company information</td>
<td>The filing and sharing of company information in Germany follows the same general procedures as those of company registration, with regard to the</td>
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<tr>
<td>Member State</td>
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<tr>
<td>Netherlands</td>
<td>Digital tools are available for filing and disclosure of company information.</td>
<td>Commercial register; (ii) the Official Federal Publication Gazette (i.e. Bundesanzeiger).</td>
<td>Information. The process, therefore, cannot be considered to be direct or end-to-end.</td>
<td>Availability of digital tools, i.e. an official deed by a notary is required for certain company information to be filed electronically, e.g. VAT number.</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>Digital tools are available for filing and disclosure of company information.</td>
<td>Electronic filing and disclosure of information is possible through the online portal maintained by the Registry Agency, which is directly hosted by the Ministry of Justice. The scope of information allowed to be filed and shared using this portal encompasses data relating to registration, dissolution and mergers.</td>
<td>Intermediaries are required for the filing and sharing of company information, which must be carried out by civil officers within the Registry Agency. The process, therefore, cannot be considered to be direct or end-to-end.</td>
<td>In Bulgaria, the Commercial Register (i.e. the unified register which stores the whole information concerning companies) allows for filing and sharing of company information in an indirect way, i.e. data has to be entered through the Registry Agency portal by specialised civil officers.</td>
</tr>
<tr>
<td>France</td>
<td>Digital tools are available for filing and disclosure of company information.</td>
<td>Filing and disclosure of company information is made available in France through an online platform called Infogreffe, which sources data directly from Commercial Registers.</td>
<td>Intermediaries are required for the filing and sharing of company information. The available tool (i.e. Infogreffe) operates in an indirect way, sourcing information directly from the Commercial Registers.</td>
<td>In France, the Commercial Registers collect all the relevant company data regarding company registration, dissolution and mergers. This information is then sourced by an online tool (i.e. Infogreffe), which publishes it.</td>
</tr>
<tr>
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<tr>
<td>Luxembourg</td>
<td>Digital tools are available for some aspects of filing and disclosure of information, e.g. amendments to consolidated articles of association.</td>
<td>Electronic filing and disclosure of company information takes place through two online platforms: one hosted by the Trade and Companies Register (RCS) using a digital tool called LuxTrust certificate; another dedicated specifically to filing of financial and accounting data - Plateforme électronique de Collecte des Données Financières – eCDF.</td>
<td>Intermediaries are required for the filing and disclosure of some company information e.g. notaries have to file all the required documentation for registering a company in the electronic platform hosted by the RCS. Other information (e.g. accounting information and financial statements) can be filed directly and in an end-to-end manner through the eCDF platform.</td>
<td>National-level research still ongoing</td>
</tr>
<tr>
<td>Hungary</td>
<td>Digital tools are available for some aspects of filing and sharing of company information, but have to be used by notaries or lawyers representing the applicant(s).</td>
<td>In Hungary, all the required documentation about a company can be pooled together in an E-acta. Electronic documents must be authenticated by means of qualified electronic signatures and time stamping (e.g. E-Szignő). However, legal representation is necessary to carry out these processes.</td>
<td>Intermediaries are required for filing and sharing company information, e.g. legal representatives of the applicant have to file all the required documentation for registering a company, or making an amendment to the articles of association, in the court of registry of the appropriate jurisdiction. The process,</td>
<td>All the documentation submitted to County Courts must be countersigned by an attorney who possesses the required digital signature and time-stamp platforms. Legal representation is mandatory with obligatory technical safeguards. However, the process itself is entirely digitalised.</td>
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<tr>
<td>Member State</td>
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<tr>
<td>Belgium</td>
<td>Digital tools are available for filing and disclosure of minor information (e.g. company address, contact data).</td>
<td>Digital tools are only available for filing and disclosure of minor information in Belgium (e.g. company address, contact data). This is done directly through the national business database.</td>
<td><strong>Intermediaries are required</strong> for filing and sharing of substantial company information. The process, therefore, cannot be considered to be direct or end-to-end.</td>
<td>In Belgium, filing and disclosure of company information can only be carried out without the presence or interference of a notary for minor, non-structural information (e.g. company address, contact details). Conversely, for substantial filing and disclosure of company information, documentation must be submitted to the court of commerce via a notary and, in some cases, in paper format.</td>
</tr>
<tr>
<td>Romania</td>
<td>Digital tools are mostly not available for filing and disclosure of company information.</td>
<td>Digital tools are mostly not available for filing and disclosure of company information.</td>
<td><strong>Intermediaries are required</strong> for filing and disclosing company information.</td>
<td>Digital tools are mostly not available for filing and disclosure of company information.</td>
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</tbody>
</table>
5.1.3 Company dissolution

Company dissolution operations across the 14 Member States included in the scope of this study are diverse. The type of digital tools made available for such operations also vary from country to country. **Most countries allow for the use of digital tools for company dissolution operations.** It is only in Estonia that these available tools allow for the direct, end-to-end dissolution of companies. In other Member States (e.g. Germany, Portugal, Italy) intermediaries must handle the electronic systems. **The United Kingdom, Belgium and the Netherlands do not allow digital tools to be used for the purpose of dissolving a company.** Figure 3 provides an illustrative overview of the types of digital tools available in this context across the 14 Member States.

**Figure 3:** Illustrative representation of the available digital tools for company dissolution across the 14 Member States in the scope of this study.

In **Germany**, the application for dissolution of a limited company in the commercial register takes place through an electronic official deed by a notary. The same rules and procedures as for the registration of company are applicable (see 5.1.1). For the dissolution of a limited company (i.e. which leads to the liquidation of the legal person), an application for registration in the commercial register must be filed (§ 65 GmbHG; § 263 AktG).

In **Estonia**, company dissolution is regulated by the Commercial Code. Section 204 of the Commercial Code provides that the decision for dissolution of the company must be submitted by the management board to the Business Registry. The application is accompanied by the decision of the shareholders and the voting report of the shareholders meeting. These documents can be submitted electronically through the Company Registration Portal (https://ettevotja portaal.rik.ee). According to Section 212 of the Commercial Code, the liquidators are also obliged to publish the liquidation notice in the Official Publications (i.e. Ametlikud Teadaanded). The publication of the notice can also be done in the electronic version of Ametlikud Teadaanded.

In **France**, all the provisions applicable to company registration (see 5.1.1) are also applicable to company dissolution.

In the **United Kingdom**, documents for the dissolution of companies cannot be filed electronically, although a withdrawal can be made on the WebFiling tool.

In **Luxembourg**, a sole trader that ceases its activities or whose business manager / operator leaves the company must cancel affiliations or authorisations in the RCS. This can be done online through [96](https://www.gov.uk/government/publications/company-strike-off-dissolution-and-restoration/strike-off-dissolution-and-restoration, Section 8).
the Dépôt électronique auprès du RCS. Following liquidation of a company, the liquidator must submit the extract from the judgment ordering the liquidation and from the judgment closing the liquidation procedure with the RCS for publication in the RESA. At the time the company is put up for liquidation and when the liquidation procedure is closed, the clerk of the court provides an extract from the judgment to the RCS for the purpose of registration of the judicial decision in the RCS. The indication “en liquidation judiciaire” (judicial liquidation) or “radiée” (removed) will show next to the company name in the search results on the RCS’s website (under the section “Consulter une personne”). As to the voluntary dissolution of a company, after the appointment of a liquidator at an extraordinary general meeting (i.e. with a mandatory presence of a notary), the liquidator must declare the cessation of its activity to RCS. In the case of a public limited company, the liquidator ensures the publication of the annual financial statement (i.e. an accounting package online RCS via a LuxTrust certificate must be submitted). At the time of lodging the accounts the liquidator must indicate, where applicable, that the annual financial statements were properly validated on the eCDF platform by ticking the appropriate box, so that the RCS can automatically collect the accounting data from the eCDF platform, namely: the balance sheet; the profit and loss accounts; the account balance and other unstructured financial documents in PDF/A format.

In Belgium, company dissolution is dealt with by a special department at the registry. Company representatives are required to go in-person to this department, and submit the relevant documentation. Dissolution can be judicial or voluntary. In judicial dissolution, the information regarding the dissolution process is automatically published in the electronic version of the official journal. In voluntary dissolution, it is necessary to fill in forms and to physically go to the registry of the court of commerce, which registers the information. This information is subsequently published in the electronic official journal.

In the Netherlands, the dissolution of a company must be entered in the commercial register (art. 2:19 Civil Code; art 40 Handelsregisterbesluit 2008). No digital tools are available for this process: a paper application form must be filled in and sent by post to the KvK. The same rules for the dissolution of cross-border and formally foreign companies apply as for their registration.

In Portugal, the processes of administrative simplification have reflected on measures to facilitate the dissolution or winding-up of companies, introduced by Decree-Law N°76A/2006, of 29 March. Although not allowing for direct or end-to-end possibilities for company dissolution, the business portal (see 5.1.1 and 5.1.2) allows for the introduction of an application for registration by transcription of dissolution, with or without appointment of liquidators, for the completion of the liquidation, for dissolution with completion of the liquidation, and for the initial request for immediate termination. The dissolution of a commercial company takes immediate effect when: (1) all the shareholders agree to its dissolution; and (2) there are no assets or liabilities to liquidate.

In Italy, the company dissolution process starts on the date when such a decision is filed with the Business Registry, upon agreement at a shareholders meeting. In all other cases, the effects of the dissolution start from the date when the declaration of the company directors establishing the cause of the dissolution is filed with the Business Registry. The declaration of the directors establishing the cause of the dissolution, the decision appointing liquidator(s), the final liquidation accounts and the application for dissolution may be filed online using a ComUnica filing made by registered users on a dedicated online platform (i.e. Comunica Starweb). A downloadable software programme is also available for completing the filing off-line (Comunica Impresa). The filing may be made by a company director, a liquidator or a representative using a digital signature.

In Poland, companies established by using the standard electronic process (see 5.1.1) may be dissolved using digital tools through the adoption of a resolution on dissolution. All shareholders must submit their vote accompanied by a secure electronic signature confirmed by a valid qualified certificate or signed with a confirmed ePUAP trusted profile.

In Hungary, all the provisions applicable to company registration (see 5.1.1) are also applicable to company dissolution.

A comparative summary outlining the similarities and differences with regard to the availability of digital tools for company dissolution operations across the Member States is provided in Table 8. The
Member States are ordered in terms of the availability of digital tools with the most advanced at the top.

Out of the 14 Member States included in the scope of this study, three currently have digital tools in place that allow for direct, end-to-end company dissolution operations, namely EE, PL, DK. Out of the remaining Member States, PT, UK, IT, DE, NL, BG, FR, LU, HU, BE also allow for the use of digital tools in the context of company dissolution operations, but not in a direct or end-to-end manner. In these Member States, intermediaries are usually required for dissolving limited liability companies through digital tools.
### Table 8: Comparative summary of the availability of digital tools for company dissolution across the 14 Member States included in the scope of this study.

<table>
<thead>
<tr>
<th>Member State</th>
<th>Availability of digital tools for company dissolution</th>
<th>Electronic platforms available for the dissolution of limited liability companies</th>
<th>Intermediaries required</th>
<th>Summary of the dissolution process for limited liability companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estonia</td>
<td>Digital tools are available for company dissolution.</td>
<td>Companies can be dissolved directly through the <em>Company Registration Portal</em> and notices can be published in the electronic version of <em>Ametlikud Teadaanded</em>, available online at: <a href="https://ettevotjaportal.rik.ee/">https://ettevotjaportal.rik.ee/</a></td>
<td>No intermediaries are required. The electronic company dissolution process can be carried out in a <strong>direct, end-to-end manner</strong>.</td>
<td>The Commercial Code regulates the dissolution of companies. Section 204 of the Commercial Code provides that the decision for dissolution of the company is submitted by the management board to the Business Registry directly. The application is accompanied by the decision of the shareholders and the voting report of the shareholders meeting. These documents can be submitted electronically through the Company Registration Portal (<a href="https://ettevotjaportal.rik.ee">https://ettevotjaportal.rik.ee</a>). All required publications of liquidation notices can be submitted fully through electronic format in the <em>Ametlikud Teadaanded</em>.</td>
</tr>
<tr>
<td>Poland</td>
<td>Digital tools are available for company dissolution for companies that were established through the standard electronic registration procedure (see 5.1.1).</td>
<td>Limited liability companies can be dissolved directly online through a web portal, i.e. <em>S24 / ePUAP</em>. This applies only to companies that were registered using the standard electronic procedure (see 5.1.1).</td>
<td>No intermediaries are required. The electronic company dissolution process can be carried out in a <strong>direct, end-to-end manner</strong>.</td>
<td>In line with the Polish law, companies established by using the standard electronic procedures, may be dissolved through the adoption of a resolution on dissolution by using digital tools. All shareholders must submit their vote accompanied by a secure electronic signature confirmed by a valid qualified certificate or signed with a confirmed ePUAP trusted profile.</td>
</tr>
<tr>
<td>Denmark</td>
<td>Digital tools are available for company dissolution. The same principles as for company registration apply (see 5.1.1)</td>
<td>A direct online solution provided by the Danish Business Authority is available for the dissolution of limited liability companies at: <a href="https://www.virk.dk/">https://www.virk.dk/</a></td>
<td>No intermediaries are required. The electronic company dissolution process can be carried out in a <strong>direct, end-to-end manner</strong>.</td>
<td>The online solution provided by the Danish Business Authority for the registration of companies (including limited liability companies) also applies to company dissolution.</td>
</tr>
<tr>
<td>Member State</td>
<td>Availability of digital tools for company dissolution</td>
<td>Electronic platforms available for the dissolution of limited liability companies</td>
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</tr>
<tr>
<td>Portugal</td>
<td>Digital tools are available for some aspects of company dissolution, e.g. application for registration by transcription of dissolution for the completion of liquidation.</td>
<td>The available tools for filing documentation relevant to the dissolution of limited liability companies are available at the Citizen’s Portal: <a href="https://www.portaldocidadao.pt/">https://www.portaldocidadao.pt/</a></td>
<td><strong>Intermediaries are required</strong> to dissolve a limited liability company in Portugal (i.e. appearance before a registry). The process, therefore, cannot be considered direct or end-to-end.</td>
<td>The process of dissolving a limited liability company takes place at a registry, which has replaced the compulsory involvement of the court. Although the available procedures did not introduce direct or end-to-end possibilities, the Citizen’s Portal allows one to introduce an application for registration by transcription of dissolution, with or without appointment of liquidators, for the completion of the liquidation, for dissolution with completion of the liquidation and for the initial request for immediate termination.</td>
</tr>
<tr>
<td>Italy</td>
<td>Digital tools are available for some aspects of company dissolution, e.g. submission of the declaration of directors establishing the cause of dissolution, the decision appointing liquidator(s).</td>
<td>Some aspects of company dissolution, e.g. submission of the declaration of directors establishing the cause of dissolution, the decision appointing liquidator(s), can be carried out through the filing of a communication through the ComUnica system, i.e. an electronic procedure developed by the Italian Chambers of Commerce.</td>
<td><strong>Intermediaries are required</strong> for the dissolution of limited liability companies, i.e. the appointment of the liquidator(s) has to be registered directly with the Business Registry; the final accounts of the company, as prepared by the liquidator(s), have to be accompanied by a report of the statutory auditors and registered in the Business Registry. The process, therefore, cannot be considered direct or end-to-end.</td>
<td>In Italy, some aspects of company dissolution, e.g. submission of the declaration of directors establishing the cause of dissolution, the decision appointing liquidator(s), can be carried out through the filing of a communications through the ComUnica system.</td>
</tr>
<tr>
<td>Germany</td>
<td>Digital tools are available for company dissolution, but have to be used by notaries rather than applicants. The same provisions as for company registration apply</td>
<td>In Germany, company dissolution through digital tools takes place through the Elektronisches Gerichts- und Verwaltungspostfach (i.e. EGVP), and can only be handled by notaries. The EGVP is an electronic</td>
<td><strong>Intermediaries are required</strong> for the dissolution of limited liability companies, as the same provisions as for company registration apply (see 5.1.1). The process, therefore, cannot be</td>
<td>The same provisions as for company registration apply to company dissolution (see 5.1.1).</td>
</tr>
<tr>
<td>Member State</td>
<td>Availability of digital tools for company dissolution</td>
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<tr>
<td><strong>Netherlands</strong></td>
<td>Digital tools are available for company dissolution, but have to be used by notaries rather than applicants. The same provisions as for company registration apply to company dissolution (see 5.1.1).</td>
<td>The dissolution of limited liability companies can only be filed electronically by a notary. The same provisions as for company registration apply to company dissolution (see 5.1.1).</td>
<td><strong>Intermediaries are required</strong> for the dissolution of limited liability companies. The same provisions as for company registration apply to company dissolution (see 5.1.1). The process, therefore, cannot be considered direct or end-to-end.</td>
<td>The same provisions as for company registration apply to company dissolution (see 5.1.1).</td>
</tr>
<tr>
<td><strong>Bulgaria</strong></td>
<td>Digital tools are available for some aspects of dissolution of limited liability companies, e.g. the electronic submission of documentation declaring insolvency. The available digital tools for company registration are the same as those for company dissolution.</td>
<td>The same provisions as for company registration apply to company dissolution (see 5.1.1).</td>
<td><strong>Intermediaries are required</strong> for the dissolution of limited liability companies. The same provisions as for company registration apply to company dissolution (see 5.1.1).</td>
<td>The same provisions as for company registration apply to company dissolution (see 5.1.1).</td>
</tr>
<tr>
<td><strong>France</strong></td>
<td>Digital tools are available for some aspects of company dissolution, such as filing of information in a central database. However, other aspects require the in-person intervention of an</td>
<td>The same provisions as for company registration apply to company dissolution (see 5.1.1).</td>
<td><strong>Intermediaries are required</strong> for the dissolution of limited liability companies. The same provisions as for company registration apply to company dissolution (see 5.1.1).</td>
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</tr>
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<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>Digital tools are available for some aspects of company dissolution, such as filing of information in a central database. However, other aspects require the in-person intervention of a notary.</td>
<td>Dedicated electronic platforms can be used by applicants seeking to dissolve a limited liability company in Luxembourg, i.e. Plateforme électronique de Collecte des Données Financières – eCDF, LuxTrust. However, this platform can only be used for filing of documentation (e.g. annual financial statements), which must be preceded by the appointment of a liquidator in the presence of a notary, and submission of a business cancellation permit.</td>
<td><strong>Intermediaries are required</strong> for the dissolution of limited liability companies. The presence of a notary is mandatory when appointing a liquidator. This step is preceded by a submission of a permit for cancellation of business, deregistration from social security, and declaration of termination with the Land Registration and Estates Department, for which no digital tools are available. The process, therefore, cannot be considered direct or end-to-end.</td>
<td>In Luxembourg, the only step of the dissolution of limited liability companies that can be carried out electronically is the filing of documentation by the liquidator (e.g. financial statements). This step, however, is preceded by multiple processes that cannot be carried out electronically and also require the intervention of intermediaries, e.g. submission of a business cancellation permit.</td>
</tr>
<tr>
<td>Hungary</td>
<td>Digital tools are available for some aspects of company dissolution, but have to be used by notaries or lawyers representing the applicant(s). The same provisions as for company registration apply to company dissolution (see 5.1.1).</td>
<td>The same provisions as for company registration apply to company dissolution (see 5.1.1).</td>
<td><strong>Intermediaries are required</strong> for the dissolution of limited liability companies, i.e. legal representatives of the applicant have to file all the required documentation for dissolving a company in the court of registry of the appropriate jurisdiction. The same provisions as for company registration apply to company dissolution (see 5.1.1).</td>
<td>The same provisions as for company registration apply to company dissolution (see 5.1.1).</td>
</tr>
<tr>
<td>Member State</td>
<td>Availability of digital tools for company dissolution</td>
<td>Electronic platforms available for the dissolution of limited liability companies</td>
<td>Intermediaries required</td>
<td>Summary of the dissolution process for limited liability companies</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------------------------</td>
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<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>Belgium</td>
<td>Digital tools are not available for the dissolution of limited liability companies, as applicants seeking to dissolve a company are required to physically appear at the company dissolution department of the company registry, and further submit documentation in paper format.</td>
<td>Digital tools are not available for the dissolution of limited liability companies, as applicants seeking to dissolve a company are required to physically appear at the company dissolution department of the company registry, and further submit documentation in paper format.</td>
<td>Intermediaries are required for the dissolution of limited liability companies, i.e. applicants are required to appear in-person at the registry and submit documentation in paper format.</td>
<td>Digital tools are not available for the dissolution of limited liability companies, as applicants seeking to dissolve a company are required to physically appear at the company dissolution department of the company registry. However, upon completion of the dissolution process, an official notice is published in a national database and official journal of the registry court.</td>
</tr>
<tr>
<td>Romania</td>
<td>Digital tools are not available for the dissolution of limited liability companies, as applicants seeking to dissolve a company are required to physically appear before a notary and a registry court.</td>
<td>Digital tools are not available for the dissolution of limited liability companies, as applicants seeking to dissolve a company are required to physically appear before a notary and a registry court.</td>
<td>Intermediaries are required for the dissolution of limited liability companies, i.e. applicants are required to appear in-person at the registry and before a notary. The process, therefore, cannot be considered to be direct or end-to-end.</td>
<td>Digital tools are not available for the dissolution of limited liability companies, as applicants seeking to dissolve a company are required to physically appear before a notary and a registry court.</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Digital tools are not available for company dissolution.</td>
<td>In the UK, limited liability companies cannot be dissolved through digital tools, although a withdrawal can be made on the WebFiling tool (see 5.1.1)</td>
<td>Digital tools are not available for company dissolution.</td>
<td>Digital tools are not available for company dissolution in the UK.</td>
</tr>
</tbody>
</table>
5.1.4 Mergers

Merger operations are diverse across the 14 Member States included in the scope of this study. The type of digital tools made available for such operations also vary from country to country. Some countries allow for specific aspects of the merger process to be done through the use of digital tools (e.g. Germany, Portugal, Italy), whereas others do not allow for the use of digital tools in the context of merger operations at all (e.g. Estonia, Poland, France). Only Denmark allows for a direct, end-to-end online tool for the purpose of carrying out a merger operation. Figure 4 provides an illustrative overview of the types of digital tools available in this context across the 14 Member States.

Figure 4: Illustrative representation of the available digital tools for mergers across the 14 Member States in the scope of this study.

In Germany, the submission of an application for a merger of companies on the commercial register takes place through an electronic official deed issued by a notary. The same rules and procedures as for company registration are applicable (see 5.1.1). In addition, for the merger of limited companies, the company representatives have to file an application for registration in the commercial register (§ 16 Umwandlungsgebet – Transformation Act), whereby the same rules and procedures as for company registration are applicable (see 5.1.1).

In Estonia, Section 4274 of the Commercial Code specifies that a petition for entry of the merger in the register shall set out the personal identification code of an acquiring natural person. In order to verify that the information is correct, members of the management board shall confirm that the submitted information is accurate. Generally, when filing for a merger operation, company representatives must appear in-person at the notary, i.e. Section 400(1) point 1 of the Commercial Code provides that the application to the Business Registry shall be accompanied by a notarised copy of the merger agreement.

In the United Kingdom, the forms for mergers of companies have to be submitted on paper101. Section 911 of the Companies Act 2006 requires that members of merging companies must be able to inspect documents relating to the other company’s draft terms, directors’ explanatory report, expert’s report, annual accounts and reports for the last three financial years and any supplementary accounting statements. Section 911(5) of the Companies Act 2006 permits these documents to be

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provided electronically. Digital tools in the form of Virtual Data Rooms appear to be widely used in mergers during the due diligence process.

In **Belgium**, companies are required to go in-person to the registry of the court of commerce in order to file for mergers. There is no available digital tool to directly register the merger information or to apply for mergers. The relevant documentation must be submitted in-person before a notary.

In the **Netherlands**, Art 2:314 Civil Code requires that the proposition for a merger must be made public in the commercial register. The proposition is a normal contract between the merging companies, which governs the outlook of the new merged company. Together with the merger proposition the company also has to enter the annual financial statements for the last three financial years. The means of entering the merger proposition are the same as for the entry of the company registration (see 5.1.1). Private persons do the entry directly, by sending the documents by post. Notaries can enter the merger proposition electronically by the online system for notaries (see 5.1.1). The website of the KvK provides a page for the electronic registration of a merger. Access to the online registration tool is, however, only possible for notaries.

In **Portugal**, a public deed is not normally required for merging or splitting companies, and it is sufficient to register the merger plans at the Companies Registry. These plans, the notice of the merger, and the merger documents are then published online at [http://publicacoes.mj.pt](http://publicacoes.mj.pt). From the 4th, article 98, of the Commercial Companies Code – “The operation of merger can be prepared by means of an electronic template available on the Internet page that allows the delivery of all necessary documents and the immediate promotion of the registration of the operation, under the terms to be defined by order of the member of the Government responsible for the area of Justice”. Under the SIMPLEX program, electronic models for mergers and spin-off projects were made available to companies at [www.empresaonline.pt](http://www.empresaonline.pt) or at [www.portaldempresa.pt](http://www.portaldempresa.pt). Regulation No. 120/2009 foresees that a paper version must still be delivered to the Authority within three days counting from the date on which the notification for merger was originally submitted by email. This platform can be used for electronic filing of documents, but also as a communication tool on all mergers notifications and communications between the companies and the Competition Authority.

In **Italy**, the merger plan, the resolution approving the merger, and the merger decision may be filed online using a ComUnica filing made by registered users on a dedicated online platform (Comunica [Starweb](http://starweb.infocamere.it/starweb/index.jsp)), administered by the Italian Chambers of Commerce. A downloadable software programme is also available for completing the filing off-line (Comunica [Impresa](http://starweb.infocamere.it/starweb/index.jsp)). The filing may be made by a company director or a representative using a digital signature. Cross-border mergers are governed by the same rules, except where differently provided by Legislative Decree No 108/2008, which transposes Directive 2005/56.

In **Poland**, companies are required to go in-person to the registry of the court of commerce in order to file for mergers. There is no available digital tool to directly register the merger information or to apply for mergers.

In **Hungary**, all the provisions applicable to company registration (see 5.1.1) are also applicable to mergers.

A comparative summary outlining the similarities and differences with regard to the availability of digital tools for merger operations across the Member States is provided in Table 9. The Member States are ordered in terms of the availability of digital tools with the most advanced at the top.

Out of the 14 Member States included in the scope of this study, only Denmark currently has digital tools in place that allow for direct, end-to-end company merger operations. Out of the remaining Member States, UK, PL, EE, IT, DE, NL, BG, FR, LU, HU, BE, PT also allow for the use of digital tools in the context of company merger operations, but not in a direct or end-to-end manner. In these Member States, intermediaries are usually required for mergers of limited liability companies through digital tools.

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102 See website KvK: [https://www.kvk.nl/inschrijven-en-wijzigen/deponeren/fusie--en-splitsingsvoorstel/](https://www.kvk.nl/inschrijven-en-wijzigen/deponeren/fusie--en-splitsingsvoorstel/)

103 The online platform is available here <http://starweb.infocamere.it/starweb/index.jsp>

104 The software can be downloaded here <https://www.registroimprese.it/en/web/guest/comunica#tab=cosa&under-tab=strumenti>
Table 9: Comparative summary of the availability of digital tools for mergers across the 14 Member States included in the scope of this study.

<table>
<thead>
<tr>
<th>Member State</th>
<th>Availability of digital tools for mergers</th>
<th>Electronic platforms available for mergers of limited liability companies</th>
<th>Intermediaries required</th>
<th>Summary of the merger process for limited liability companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>Digital tools are available for mergers, both at national and cross-border level. The same principles as for company registration apply (see 5.1.1)</td>
<td>A direct online solution provided by the Danish Business Authority is available for merging limited liability companies to file their decision to conduct a merger at: <a href="https://www.virk.dk/">https://www.virk.dk/</a> Merging companies must also notify the Danish Competition and Consumer Authority, through an electronic platform, available online at: <a href="http://en.kfst.dk/Competition/Merger-control">http://en.kfst.dk/Competition/Merger-control</a></td>
<td>No intermediaries are required. The electronic company mergers process can be carried out in a direct, end-to-end manner.</td>
<td>The online solutions provided by the Danish Business Authority, and Danish Competition and Consumer Authority, allow for a direct and end-to-end platform to carry out merger operations at both national and cross-border level. This applies to all types of companies, including limited liability companies.</td>
</tr>
<tr>
<td>Portugal</td>
<td>Digital tools are available for merger operations.</td>
<td>The available tools mergers of limited liability companies are available at the Citizen’s Portal: <a href="https://www.portaldocidadao.pt/">https://www.portaldocidadao.pt/</a> The available digital tools allow members of the management of the merging companies to work collaboratively in an online environment, and jointly generate the necessary documentation, e.g. draft merger agreement.</td>
<td>Intermediaries are not required to merge limited liability companies in Portugal. The process can be completed directly through joint collaboration of the management board of the merging companies in a dedicated electronic, online environment, in a direct, end-to-end manner.</td>
<td>The vast majority of merger operations between limited liability companies in Portugal do not require the intervention of a notary, or the drafting of a certified public deed. The required documentation can be co-created between members of the management boards of the merging companies in a dedicated electronic, online environment, which is available in the Citizen’s Portal. Official publications with regard to merger operations are handled electronically.</td>
</tr>
<tr>
<td>Estonia</td>
<td>Digital tools are available for some aspects of mergers, such as amending data in the Merging companies can amend data directly through the Company Registration</td>
<td></td>
<td>Intermediaries are required to merge limited liability companies in Estonia</td>
<td>Limited liability companies looking to submit a merger application in Estonia must appear before a notary and obtain a notarised copy of the merger</td>
</tr>
<tr>
<td>Member State</td>
<td>Availability of digital tools for mergers</td>
<td>Electronic platforms available for mergers of limited liability companies</td>
<td>Intermediaries required</td>
<td>Summary of the merger process for limited liability companies</td>
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<td>-------------------------------------------------</td>
</tr>
<tr>
<td>Poland</td>
<td>Digital tools are available for mergers, both at national and cross-border level. The same principles as for company registration apply (see 5.1.1)</td>
<td>Portal after the merger procedure takes place, available online at: <a href="https://ettevotjaportaal.rik.ee">https://ettevotjaportaal.rik.ee</a></td>
<td>Intermediaries are required to merge limited liability companies in Poland (i.e. appearance before a notary in order to obtain a notarised copy of the merger agreement). The process, therefore, cannot be considered direct or end-to-end.</td>
<td>The same provisions as for company registration apply to mergers (see 5.1.1).</td>
</tr>
<tr>
<td>Italy</td>
<td>Digital tools are available for some aspects of mergers, e.g. submission of the merger plan, resolution approving the merger.</td>
<td>Some aspects of mergers of limited liability companies, e.g. submission of the merger plan, resolution approving the merger, can be carried out through the filing of a communications through the ComUnica system, i.e. an electronic procedure developed by the Italian Chambers of Commerce.</td>
<td>Intermediaries are required for mergers of limited liability companies. Specifically, the resolution approving the merger, the merger plan, and other required documentation (e.g. balance sheets) must be filed by a notary. The process, therefore, cannot be considered direct or end-to-end.</td>
<td>In Italy, the required documentation underlying merger deals between limited liability companies can be filed electronically using the ComUnica platform. However, this must be done by a notary.</td>
</tr>
<tr>
<td>Germany</td>
<td>Digital tools are available for mergers, but have to be used by notaries rather than applicants. The same provisions as for company registration apply to mergers (see 5.1.1).</td>
<td>In Germany, merger operations through digital tools take place through the Elektronisches Gerichts-und Verwaltungspostfach (i.e. EGVP), and can only be</td>
<td>Intermediaries are required for mergers of limited liability companies. The same provisions as for company registration apply (see 5.1.1). The process,</td>
<td>The same provisions as for company registration apply to mergers (see 5.1.1).</td>
</tr>
</tbody>
</table>
### Assessment of the impacts of using digital tools in the context of cross-border company operations – Final Report

<table>
<thead>
<tr>
<th>Member State</th>
<th>Availability of digital tools for mergers</th>
<th>Electronic platforms available for mergers of limited liability companies</th>
<th>Intermediaries required</th>
<th>Summary of the merger process for limited liability companies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Netherlands</strong></td>
<td>Digital tools are available for mergers, but have to be used by notaries rather than applicants. The same provisions as for company registration apply to mergers (see 5.1.1).</td>
<td>Mergers of limited liability companies can only be filed electronically by a notary. The same provisions as for company registration apply to mergers (see 5.1.1).</td>
<td>Intermediaries are required for mergers of limited liability companies. The same provisions as for company registration apply to mergers (see 5.1.1).</td>
<td>The same provisions as for company registration apply to mergers (see 5.1.1).</td>
</tr>
<tr>
<td><strong>Bulgaria</strong></td>
<td>Digital tools are available for some aspects of mergers of limited liability companies, e.g. the electronic submission of requests to merge. Available digital tools for company registration are generally the same as those for mergers.</td>
<td>The same provisions as for company registration apply to mergers (see 5.1.1).</td>
<td>Intermediaries are required for mergers of limited liability companies. The same provisions as for company registration apply to mergers (see 5.1.1), e.g. formal re-structuring examiners have to be appointed by the merging companies.</td>
<td>The same provisions as for company registration generally apply to mergers (see 5.1.1).</td>
</tr>
<tr>
<td><strong>France</strong></td>
<td>Digital tools are available for some aspects of mergers of limited liability companies, e.g. publication of merger deals in the BODACC.</td>
<td>The same provisions as for company registration apply to mergers (see 5.1.1).</td>
<td>Intermediaries are required for mergers of limited liability companies, e.g. companies participating in national or cross-border mergers must also notify a notary or a clerk.</td>
<td>The same provisions as for company registration generally apply to mergers (see 5.1.1).</td>
</tr>
<tr>
<td><strong>Luxembourg</strong></td>
<td>Digital tools are available for mergers, but have to be used by notaries rather than applicants. The same provisions as for</td>
<td>Mergers of limited liability companies can only be filed electronically by a notary. The same provisions as for</td>
<td>Intermediaries are required for mergers of limited liability companies. The same provisions as for</td>
<td>In general, companies are required to register merger and demerger operations with the RCS for publication purposes in RESA. This holds true both for domestic and cross-border mergers and</td>
</tr>
<tr>
<td>Member State</td>
<td>Availability of digital tools for mergers</td>
<td>Electronic platforms available for mergers of limited liability companies</td>
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<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Hungary</td>
<td>Digital tools are available for some aspects of mergers, but have to be used by notaries or lawyers representing the applicant(s). The same provisions as for company registration apply to mergers (see 5.1.1).</td>
<td>The same provisions as for company registration apply to mergers (see 5.1.1).</td>
<td>Intermediaries are required for mergers of limited liability companies, i.e. legal representatives of the applicant have to file all the required documentation for merging companies in the court of registry of the appropriate jurisdiction. The same provisions as for company registration apply to mergers (see 5.1.1).</td>
<td>The same provisions as for company registration apply to mergers (see 5.1.1).</td>
</tr>
<tr>
<td>Belgium</td>
<td>Digital tools are not available for mergers, as applicants seeking to merge companies are required to physically appear at the registry of the court of commerce, and further submit documentation in paper format.</td>
<td>Digital tools are not available for mergers, as applicants seeking to merge companies are required to physically appear at the registry of the court of commerce, and further submit documentation in paper format. However, notaries, authorised offices, or the registry of the court of commerce will publish information upon completion or abortion of the merger deal electronically.</td>
<td>Intermediaries are required for mergers, i.e. applicants are required to appear in-person at the registry of the court of commerce and present documentation in paper format.</td>
<td>Digital tools are not available for mergers, as applicants seeking to merge companies are required to physically appear at the registry of the court of commerce. However, on completion of the merger process, an official notice is published in a national database and official journal of the registry court.</td>
</tr>
<tr>
<td>Romania</td>
<td>Digital tools are not available for mergers, as applicants seeking to merge companies are required to physically appear.</td>
<td>Digital tools are not available for mergers, as applicants seeking to merge companies are required to physically appear.</td>
<td>Intermediaries are required for the mergers, i.e. applicants are required to appear in-person at the registry and before a notary.</td>
<td>Digital tools are not available for mergers, as applicants seeking to merge companies are required to physically appear before a notary and a registry court.</td>
</tr>
</tbody>
</table>
## Availability of digital tools for mergers

<table>
<thead>
<tr>
<th>Member State</th>
<th>Availability of digital tools for mergers</th>
<th>Electronic platforms available for mergers of limited liability companies</th>
<th>Intermediaries required</th>
<th>Summary of the merger process for limited liability companies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>appear before a notary and a registry court.</td>
<td>appear before a notary and a registry court.</td>
<td>The process, therefore, cannot be considered to be direct nor end-to-end.</td>
<td>In the UK, all the required documentation underlying merging operations between limited liability companies must be submitted on paper. However, Virtual Data Rooms (VDRs) are widely used by companies during the due diligence process; these are operated by private information technology firms.</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Digital tools are not available for mergers.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5.2 Perceived and indicated impacts: Member State overview

Primarily focusing on the hypothesised impacts detailed in section 4.3, this section presents the Member State-level perceptions and data that may indicate impacts of the use of digital tools for the four company law operations in the three target areas. For each of the three impact target areas, this section provides a descriptive summary of the types of impact data collected across the 14 Member States. This section does not provide a comprehensive overview of all indicators examined; instead, it presents the types of data and perceived impacts used to inform the latter analyses, including the magnitude of impact ratings (see section 5.3) and, subsequently, the but-for tests developed to assess causality (see section 6). Knowledge of how these elements are developed and used is not necessary at this point but will be detailed in the relevant sections.

More detailed information for the impacts identified in each Member State is included in the annexed country fiches (see Appendix IV).

Socio-economic impact target area

Focusing on the areas of exploration detailed in section 4.2.1 and the indicators highlighted in section 4.3, qualitative and quantitative data has been collected and assessed across 14 Member States. This section describes the types of impacts noted and the Member States in which they were reported by stakeholders or recorded, based on official statistics.

The potential impact most commonly reported by stakeholders – a collective which includes representatives of national authorities, business interest groups, trade union confederations, lawyers and notaries – concerns the positive effect of the use of digital tools on the efficiency with which the four company law operations can be conducted.

Regarding company registration in the United Kingdom, for instance, the costs and time taken are clearly reduced for online registration compared with the alternative (i.e. postal registration). As illustrated in Table 10, below, company registration using the UK’s end-to-end online digital tool takes 24 hours; in order for postal registration to be conducted in the same timeframe it is £88 more expensive. Furthermore, if a business does not want to pay for the expedited postal registration service, the normal postal registration takes 8-10 days and still costs more than the same-day online registration service. Similarly, and also illustrated in Table 10, the filing and disclosure of certain company information is possible through the direct, end-to-end online WebFiling tool, which reduces the costs and also the time required to undertake the filing and disclosure of this information.

Table 10: Business efficiency impacts: the UK.

<table>
<thead>
<tr>
<th></th>
<th>Online registration</th>
<th>Postal registration</th>
<th>Same-day registration</th>
<th>postal registration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td>£12</td>
<td>£40</td>
<td>£100</td>
<td></td>
</tr>
<tr>
<td><strong>Time until registration</strong></td>
<td>24 hours</td>
<td>8-10 days</td>
<td>Same-day</td>
<td></td>
</tr>
</tbody>
</table>

Filing and disclosure of company information:

Change of company name:
Companies House will normally process a standard electronic change of name application within 24 hours at a cost of £8. There is also a guaranteed same-day service available at £30. Alternatively, paper applications take up to five working days from receipt and costs £10. The paper same-day service is £50.

Capital subscribed:
Capital subscribed online, submitted with the Confirmation Statement, through the UK government’s WebFiling service. It costs £13 to submit online compared with £44 by post.105 It is due annually from the time the company was incorporated or the date the last Confirmation Statement was filed.

Stakeholders across all eight other Member States where impacts were perceived and digital tools are in use (Belgium, Bulgaria, Germany, Estonia, Hungary, Italy, Netherlands and Portugal)
stated that a key impact for which to examine the existence of a causal relationship was between the use of digital tools and increased efficiency of the company law operations.

Beyond the perceived impacts on the efficiency of the examined company law operations, trends have been identified in relation to the highlighted indicators in the following cases:

- **Number of economically inactive companies**: increases identified in Estonia\(^{106}\), Hungary\(^{107}\) and the United Kingdom\(^{108}\); and

- **Number of cross-border merger activity**: increases identified in Belgium, France, Germany, Italy, Luxembourg, the Netherlands and the UK\(^{109}\) – see Table 11;

### Table 11: Changes in cross-border merger activity between 2008 and 2012.

<table>
<thead>
<tr>
<th>Member State</th>
<th>Cross-border merger activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Belgium</strong></td>
<td></td>
</tr>
<tr>
<td>As the seat of the <strong>acquiring company</strong>: no change.</td>
<td></td>
</tr>
<tr>
<td>As the seat of the <strong>merging company</strong>: increase from four in 2008 to 23 in 2011, reducing to 18 in 2012.</td>
<td></td>
</tr>
<tr>
<td><strong>France</strong></td>
<td></td>
</tr>
<tr>
<td>As the seat of the <strong>acquiring company</strong>: increase from two cross-border mergers in 2008 to 15 in 2012.</td>
<td></td>
</tr>
<tr>
<td>As the seat of the <strong>merging company</strong>: increase from three in 2008 to 13 in 2012.</td>
<td></td>
</tr>
<tr>
<td><strong>Germany</strong></td>
<td></td>
</tr>
<tr>
<td>As the seat of the <strong>acquiring company</strong>: increase from 21 cross-border mergers in 2008 to 80 in 2011, reducing to 54 in 2012.</td>
<td></td>
</tr>
<tr>
<td>As the seat of the <strong>merging company</strong>: increase from 13 in 2008 to 51 in 2012.</td>
<td></td>
</tr>
<tr>
<td><strong>Italy</strong></td>
<td></td>
</tr>
<tr>
<td>As the seat of the <strong>acquiring company</strong>: increase from six cross-border mergers in 2008 to 67 in 2011, reducing to 44 in 2012.</td>
<td></td>
</tr>
<tr>
<td>As the seat of the <strong>merging company</strong>: increase from three cross-border mergers in 2008 to 21 in 2011, reducing to 13 in 2012.</td>
<td></td>
</tr>
<tr>
<td><strong>Luxembourg</strong></td>
<td></td>
</tr>
<tr>
<td>As the seat of the <strong>acquiring company</strong>: increase from 23 cross-border mergers in 2008 to 57 in 2012.</td>
<td></td>
</tr>
<tr>
<td>As the seat of the <strong>merging company</strong>: no change.</td>
<td></td>
</tr>
<tr>
<td><strong>Netherlands</strong></td>
<td></td>
</tr>
<tr>
<td>As the seat of the <strong>acquiring company</strong>: increase from five cross-border mergers in 2008 to 48 in 2012.</td>
<td></td>
</tr>
<tr>
<td>As the seat of the <strong>merging company</strong>: increase from six in 2008 to 78 in 2012.</td>
<td></td>
</tr>
<tr>
<td><strong>United Kingdom</strong></td>
<td></td>
</tr>
<tr>
<td>As the seat of the <strong>acquiring company</strong>: increase from five cross-border mergers in 2008 to 28 in 2012.</td>
<td></td>
</tr>
<tr>
<td>As the seat of the <strong>merging company</strong>: no change.</td>
<td></td>
</tr>
</tbody>
</table>

- **Changes to the population of enterprises**, including:
  - **Number of enterprises / registered companies**: increases noted in Bulgaria and the Netherlands;
  - **Number of enterprise births and / or birth rates**: increases noted in Poland and the UK; and
  - **Number of enterprise deaths and / or death rates**: increases noted in Bulgaria, Hungary, Italy and Poland.

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\(^{106}\) Data provided by the Estonian Business Register.

\(^{107}\) KSH (Hungarian Central Statistical Office).

\(^{108}\) Company Register Activities in the United Kingdom 2015-16, Table E2; and Company Register Activities in the United Kingdom 2014-15, Table F2.

\(^{109}\) Lexidale & Bech-Bruun (2013). *Study on the application of the cross-border mergers directive*. 
- **Perceptions on the increased accessibility and transparency of business information:** noted in Bulgaria and Hungary.

Important additional indicators collected include the following:

- **Average labour costs** per Member State: notable here is the low labour costs in Bulgaria, Hungary and Romania; and
- **Corporate tax rates** per Member State: notable here is the low corporate tax rates in Bulgaria, Hungary, Romania and Estonia (in relation to undistributed profit).

**Legal certainty impact target area**

As discussed in section 4.3, the focus of the legal certainty impact target area is slightly different, given that quantitative data to assess legal certainty is not readily available. As such, the potential impacts related to this target area are almost entirely based on stakeholder perceptions.

Contrary to the hypotheses detailed in section 4.3, the majority of stakeholders consider the impacts of the use of digital tools for company law operations on legal certainty to be positive. Similarly to the socio-economic impact target area, it is considered that the use of digital tools positively impacts (i.e. increases) the accessibility and transparency of business information, which leads to improved legal certainty across all stakeholder groups. This is noted in particular in Estonia, Hungary, Poland and Portugal.

Stakeholders in Portugal further considered that the use of digital tools brings further positive impacts to legal certainty. These include a reduced reliance on third parties in the completion of company law operations and increased transparency of the applicable rules.

In contrast to the majority of other stakeholders, business and notary representatives in Germany, as well as stakeholders in the Netherlands, note concerns that the direct, end-to-end online implementation of company law operations may have a negative impact on legal certainty. More specifically, in Germany, it is considered that, at its current level of development, the state of the art technology being used to digitally conduct company law operations cannot scrutinise the relevant information to the same level, thus negatively impacting legal certainty. Similarly, in the Netherlands, it is not considered that the available digital tools allow sufficient scrutiny to be placed on the individuals behind an entity at its registration.

However, these views are a minority across the Member States examined and representatives of the German national authorities and Dutch stakeholders also consider the legal certainty impacts of using digital tools for company law operations to be positive, due to the perceived positive impact on the transparency of business information.

Beyond these qualitative data, information was sought on the number of litigation cases where legal certainty has been challenged. Data related to this indicator was only found in Hungary, where a reduction in such cases has been reported between 2012 and 2016.

**Fraudulent / illegal activities impact target area**

Although more quantitative data are available for the fraudulent / illegal activities impact target area than for legal certainty, the publicly available data are still significantly restricted. As such, the majority of the potential impacts presented here relate to the perceptions of the key stakeholder consulted; namely, representatives of national authorities, business interest groups, trade union confederations, lawyers and notaries.

In a similar fashion to the potential impacts detailed for legal certainty, those collected for the fraudulent / illegal activities impact target area, for the most part, contradict the originally devised impact hypothesis. The hypothesis considered that the use of digital tools would lead to an increase of fraudulent / illegal activities; in fact, the majority of stakeholders consulted across the 14 Member States consider that the use of digital tools across the four company law operations reduces the incidence of fraudulent / illegal activities related to those company law operations. Such sentiments were reported in Germany, Hungary, Italy, the Netherlands, Poland, Portugal and the United Kingdom.

More specifically, in Italy, it is considered that the use of digital tools, and in particular the introduction of the online business registry and the ComUnica system for filing company documents, allows the interconnection of business data and the increased transparency of company information, which lead to more effective identification of fraudulent and illegal business activities. It is considered that the implementation of these tools, and the obligation to use such tools, may have a dissuasive impact on the actors intending to commit such crimes. Limited quantitative data was also collected.
from the Italian National Institute of Statistics, which showed minimal decreases in the number of convictions for financial crimes, tax evasion and ID fraud between 2010 and 2011 – a severely limited timeframe. Similarly, in Hungary, stakeholders consider that the use of digital tools for company law operations helps law enforcement detect fraudulent / illegal activities.

However, in a few Member States, stakeholders also reported perceptions that the use of digital tools may result in increased fraudulent / illegal activities related to the four company law operations examined (Belgium, Hungary and the Netherlands). In all three of these Member States, these perceptions relate to the risks around removing the role of notaries and / or lawyers, which they believe provide a vital service in preventing fraudulent and illegal activities.

In addition to the qualitative perceptions detailed above, quantitative data has been examined in relation to convictions for fraudulent / illegal activities, such as financial crimes, ID fraud and tax evasion, as well as the size of the shadow economy. However, limited data has been found on these inherently unreliable indicators, with recorded information provided only in Germany, Italy and the Netherlands.

5.3 Typology of Member States: use of digital tools in company law operations and impacts on the three target areas

The previous section looked to provide a detailed account of the availability of digital tools, as well as their corresponding modality, in the context of the four company law operations across the Member States included in the scope of this study. This section builds on this account by developing and presenting the following separate data sets:

- An assessment of the *extent to which digital tools are used for each company law operation* in each of the 14 Member States examined by this study; and

- An assessment of the *magnitude of identified and / or perceived impacts across the three impact target areas* (i.e. socio-economic, legal certainty, fraudulent / illegal activities) for each of the four company law operations in each of the 14 Member States.

The impacts identified and explored are based on the causality hypotheses validated with key stakeholder groups and the study experts and detailed in section 4.2. These hypotheses reflect the potential causal links between the use of digital tools for the four company law operations and the potential impacts in the target areas.

It is necessary to clarify that this section does not seek to determine causality between the use of digital tools across the four company law operations and the identified and / or perceived impacts. Instead, this section aims to develop and present two separate indicators that, in combination (presented in the form of *use-magnitude* matrices), will provide the basis for the exploration of causality in section 6. Before presenting and analysing the *use-magnitude* matrices, this section will detail the methodology for the development of the data sets and matrices.

Regarding the first data set, the study team *assessed the extent of the use of digital tools* in the four company law operations across the 14 Member States through the interpretation of a range of both quantitative and qualitative data110.

Specifically, the quantitative data used for this assessment included, but were not limited to, data on the *number of companies registered using digital tools and the proportion of total documents filed electronically*. In order to complete the extent of use assessments, the study team also considered qualitative data in the form of inputs from key stakeholder groups, such as interviews carried out with the relevant authorities (e.g. chambers of commerce, trade agencies etc., as further detailed in Appendix I).

For each company law operation in each of the 14 Member States, these data have been assessed in relation to the other Member States and the following guidelines have been used to allocate discrete ratings indicating *low, moderate or high* use of digital tools:

- **High use:** Direct and end-to-end online digital tools available and evidence of high use;

- **Moderate use:** Direct or end-to-end online digital tools available and evidence of moderate use; and

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110 A full list of assessments and underlying rationales is provided in Appendix IV.
• **Low / no use:** Neither direct nor end-to-end online digital tools available and evidence of limited or no use.

For example, Portugal is considered to have a moderate use of digital tools for company registration given that in 2016 c. 38% of companies were registered through the available digital tools. Estonia, however, was considered to have a high use of digital tools for company registration as c. 99.9% of companies registered using digital tools in 2016. Tables presenting the ratings and rationales behind those ratings are presented in Appendix IV.

Although the relevant quantitative data presented in these examples seems to allow the possibility for more stringent criteria, the availability of data differs significantly across the Member States, as does the comparability of such data. As such, it has not been possible to apply more stringent criteria than the above general guidelines.

In order to carry out the assessment of the magnitude of the impacts across the 14 Member States, the study team has relied primarily on qualitative data\(^{111}\) in the form of inputs from the stakeholders. These qualitative data have, where available and relevant, been complemented by quantitative data related to the specific target area. The usability and viability of these data sets for establishing causal connections between the use of digital tools and the reported impacts on the three target areas is discussed in detail throughout Section 6.

The assessment of the magnitude of the impacts has been conducted in a similar manner to the assessment of the extent of use of digital tools, as described above. For each company law operation, in each Member State, for each impact target area (i.e. socio-economic, legal certainty and fraudulent / illegal activities), the study team has analysed the available qualitative and quantitative data. Although this analysis does not seek to assess the causality of relationships between the use of digital tools for the four company law operations and the identified impacts in the three target areas, it does assess the magnitude of impacts considering potential correlations with the findings of the extent of use assessment (as previously hypothesised in section 4.2). As such, these analyses assess the available data against the following criteria to inform the attribution of discrete ratings for each target area, company law operation and Member State denoting whether low, moderate or high impacts had been identified:

- **High impact:** Notable trends identified in one or more of the examined impact indicators for each target area and / or notable stakeholder perceptions, taking into account the extent of use assessments;\(^{112}\)
- **Moderate impact:** Limited trends identified across the examined impact indicators for each target area or through stakeholder perceptions. As above, the assessment also takes into account the extent of use assessments; and
- **Low / No impact:** Insignificant or indiscernible trends identified in the examined impact indicators and no or limited perceived impact on the target area.

For example, in Portugal, stakeholders interviewed considered that the impacts of using digital tools on the socio-economic target area were high and positive across all company law operations, particularly in terms of the country’s economy and labour market. In contrast, in Italy, no potential impacts on the legal certainty of company registration, dissolution and filing and disclosure of company information were considered based on an assessment of the stakeholder perceptions. Estonia provides a good example of the rating methodology, as applied to the fraudulent / illegal activities target area. For this target area in Estonia, quantitative data indicated no discernible trends related to convictions for tax evasion and the stakeholders interviewed considered that there were no particular impacts of relevance to this target area. As such, the magnitude of impacts for Estonia was rated as no / low impact for the fraudulent / illegal activities target area. Tables presenting the ratings and rationales behind those ratings are presented in Appendix IV.

Due to the disparities in available data across the 14 Member States examined, it has not been possible to apply criteria more stringent than the above general guidelines. However, given the objective of these analyses is to provide an input for the causality assessment, this approach is considered sufficient.

\(^{111}\) A full list of assessments and underlying rationales is provided in the spreadsheet attached to this report.

\(^{112}\) Note that only one impact indicator / stakeholder perception needs to indicate a notable trend for the impact in that incidence to be rated as high, even if other impact indicators do not indicate notable trends. This is due to the fact that after the prioritisation of relationships through the **use-magnitude** matrices, such impact indicators are examined separately, as well as in conjunction with others, for the development of the **but-for tests** and the causality assessment.
Assessment of the impacts of using digital tools in the context of cross-border company operations – Final Report

The application of these ratings to facilitate the assessment of causality will be described through the remaining sections of this study.

The ratings comprising the following data sets have been juxtaposed in the form of three discrete use-magnitude matrices; one for each target area:

i) **Extent of use of digital tools ratings** for each company law operation in each of the 14 Member States where data is available; and

ii) **Magnitude of impact ratings** for each impact target area, for each company law operation in each of the 14 Member States where data is available.

These have been combined to achieve three key objectives: i) to provide an appropriate visual representation of the use of digital tools and the impacts on the target areas across the 14 Member States and the four company law operations; ii) to cluster Member States according to their similarities across these data; and iii) to facilitate the prioritisation of Member State-company law operation-impact area relationships to be assessed for causality (to be discussed in Section 6). The remainder of this section presents the use-magnitude matrix for each target area, highlighting the key findings.

The use-magnitude matrix for the **socio-economic impacts target area** is presented in Figure 5. An analysis of this matrix reveals that the extent of use and magnitude of impacts in the socio-economic impacts target area are the same across all four company law operations for Hungary, Germany, and Belgium. Conversely, other countries show a more dispersed pattern across the matrix depending on the company law operation. Italy is a good example of this: there is a high use of digital tools and moderate socio-economic impact for filing and disclosure of company information and company dissolution, a moderate use of digital tools and moderate socio-economic impact for company registration, and a moderate use of digital tools and low socio-economic impact for mergers. It is also worth noting that high socio-economic impacts were only reported for Estonia and Portugal, i.e. for all company operations other than mergers in Estonia.
The *use-magnitude* matrix for the *legal certainty target area* is presented in Figure 6. In a similar fashion to the *socio-economic impacts* use-magnitude matrix, the extent of use and magnitude of impacts in the *legal certainty* target area are the same across all four company law operations for **Hungary and Belgium**. Conversely, other countries show a more dispersed pattern across the matrix depending on the company law operation. **Italy** is also a relevant example in this instance: there is a high use of digital tools and low legal certainty impact for filing and disclosure of company information and company dissolution, a moderate use of digital tools and moderate legal certainty impact for mergers, and a moderate use of digital tools and low legal certainty impact for company registration. Moreover, the **United Kingdom** reveals the same aggregation pattern in both the socio-economic impacts and legal certainty *use-magnitude* matrices: company registration and filing and sharing of information present the same levels of extent of use and corresponding impact magnitude,
which is different from those presented in company dissolution and mergers. No high legal certainty impacts were reported.

**Figure 6: Use-magnitude matrix for the legal certainty target area.**

The *use-magnitude* matrix for the *illegal / fraudulent activities target area* is presented in Figure 7. In a similar fashion to the *socio-economic* and *legal certainty impacts* use-magnitude matrices, the extent of use and magnitude of impacts in the *illegal / fraudulent activities* target area are the same across all four company law operations for **Belgium and Germany**. Conversely, other countries show a more dispersed pattern across the matrix depending on the company law operation, however, not to the extent of the *socio-economic* and *legal certainty impacts* use-magnitude
matrices. High fraudulent / illegal activities impacts were only reported in Portugal, i.e. for filing and disclosure of company information and mergers.

**Figure 7: Use-magnitude matrix for the illegal and fraudulent activities target area.**

- Company registration
- Filing and disclosure of company information
- Company dissolution
- Mergers

**Extent of use of digital tools for each company law operation, per Member State**
6. Assessment of the causal relationships between the use of digital tools and the relevant impacts identified

What you will find in this chapter:

Chapter 6 first presents the methodology for assessing the potential causal links between the use of digital tools for company law operations and the identified impacts, highlighting the legal theory behind the methodology, how it has been adapted for the purposes of this study and how the analyses presented in chapter 5 and the hypotheses developed in chapter 4 are vital inputs to the assessment of causality (section 6.1).

Section 6.2 presents the results of the causality assessment at the Member State-level before triangulating these causality assessments and relevant pan-EU data (as summarised in section 5.2) to draw clear EU-wide conclusions on the links between the use of digital tools for company law operations and the identified impacts.

Chapter 6 presents the relevant methodological approach to the assessment of causality before detailing the results of that assessment:

- **Section 6.1** highlights the inputs necessary to conduct the causality assessment before presenting the methodological theory behind the establishment of causation in law and its applications in assessing causality between the use of digital tools across the four company law operations and impacts in the three target areas; and

- **Section 6.2** presents the results of the Member State-level causality assessments before concluding on the impacts of the use of digital tools for company law operations for each impact target area.

The methodological approach used when conducting the causal link analysis took the risk of data availability into consideration. Indeed, as outlined in section 6.1, different approaches were taken to analyse data sets depending on the level of quantitative and qualitative data collected by the study team. The methodological approach has benefited from significant consultation with key stakeholders, including ETUC, ETUI and BusinessEurope.

6.1 Methodological approach

Given the challenges associated with assessing causal relationships in complex environments, primarily due to the competing influences of multiple factors and the availability of comprehensive data, it is important to have clarity on how causality is assessed. This section aims to provide that clarity by:

- Summarising the inputs to the causality assessment and how they inform the assessment of causality – the inputs relate to (a) the existence and use of digital tools, and (b) whether there are any observable impacts in the three target areas;

- The basis for the methodological approach to assessing causality – i.e. theories and practices for establishing causation in law; and

- How these legal theories and practices have been adapted to ensure relevant and appropriate assessments of causality between the use of digital tools for the four company law operations and the impacts identified across the three target areas.

Sections 4 and 5 of this report provide essential inputs to enable the assessment of causality between the use of digital tools across the four company law operations and the impacts identified across the three impact target areas. These are detailed in Table 12, below.

**Table 12:** Inputs to the causality assessment from sections 4 and 5.

**Inputs to the causality assessment**

**Section 4:** Beyond describing the four company law operations and three target areas, which form the scope of this study, section 4 also details the research hypotheses on the potential impacts of using digital tools for the four company law operations across the three target areas, alongside the indicators relevant to assessing these impacts. **Testing these impact hypotheses is the primary objective of the causality assessment.**

**Section 5** details the availability and use of digital tools for the four company law operations across the 14 Member States examined before presenting ratings for the extent of use of digital tools (per company law operation, per Member State). Section 5 also presents ratings for the magnitude of
impact (per target area, per Member State), which are developed on the basis of an assessment of the perceived impacts and identified indicators in each Member State for each target area.

**Summarising the inputs**

Plotting the use-magnitude matrices for each impact target area allows the prioritisation of instances within each Member State where the ratings for the extent of the use of digital tools for a company law operation and the magnitude of the perceived impacts are high enough to allow for the possibility of a causal link. In other words, they allow us to identify where to assess whether a causal link between the use of digital tools and identified impacts can potentially be established. Conversely, they also allow one to "liquidate the negative", or to discard areas where either the low use of digital tools or the low impact observed mean that no causal link can be established.

The use-magnitude matrix below shows, for the socio-economic impact target area, which Member State company law operation combinations (i.e. the patterned cells) are excluded from the causality assessment. This is due either because of the limited use of digital tools in company operations, or the low level of observed impacts.
Based on the above prioritisation exercise, it is possible to examine in greater detail the combinations not excluded with a view to assessing whether impacts observed can be liked back to the use of digital tools and, therefore, establish a causal link.

At this point, it is necessary to discuss the basis for the assessment of causality (i.e. legal theory and practice) and how is applied to the present assessment.
Causation in law: theory and practice

In law, there are two classes of theories that describe the criteria for assessing the existence of causal connections\textsuperscript{113}. These classes of theories do not compete but address different questions in relation to the assessment of causality.

The first concerns the identification of the 'cause-in-fact' conditions, as identified under the first class of theories, should be limited (i.e. the point at which a condition, which is considered necessary for an outcome to occur, is too far removed from the outcome to be considered causal). The following is an example of a necessary condition that is beyond legal responsibility: a doctor cannot be held responsible for the death of a victim, murdered by a child, conceived as a result of the doctor's failure to prescribe an effective contraceptive\textsuperscript{116}.

In the context of providing meaningful results regarding causal links between the use of digital tools for the four company law operations and the impacts in the three target areas, elements from both theories must be considered. The questions asked by the first class of theories characterise the primary judgement – is the use of digital tools for a company law operation a necessary condition, a sufficient condition or a necessary member of a set of conditions that are together sufficient for the identified impact to occur (i.e. does the use of digital tools play a role in forming the identified impact?) Although answering these questions ascertains the conditions or factors necessary to realise an impact, it does not provide any notion of the strength of each factor's contribution.

To determine the extent to which each factor contributes to an impact, it is necessary to consider the second class of theories. Although not directly applicable, the principle of the second class of theories requires that the proximity of the use of digital tools, as a condition, to the impact is factored into the assessment. For instance, it may be possible to establish that the use of digital tools for company registration in a Member State is a necessary condition for an increase in entries on the same Member State's business register; however, the actual influence of the use of digital tools on the recorded impact may be minimal, as, although it may make company registration easier, it is logically too far removed from the increase in registered businesses, due to the involvement of significant other factors.

The extent to which each factor influences an impact is not easily distinguished. This does not provide for simple 'acceptance' or 'rejection' assessments of causality. As such, in light of these two points, many of the below assessments of causality are limited to acknowledging the use of digital tools as one of many factors and providing a gauge of the influence the use of digital tools holds in comparison to the other factors, considering all available and relevant evidence.

A widely accepted method to determine 'cause-in-fact' is the use of a but-for test, which fundamentally inquires "But for the act of the defendant, would the result have occurred?". For the below causality assessment, this method has been adapted to determine both 'cause-in-fact' and to gauge the influence of competing factors; how it has been applied is described in greater detail, below.

Practical application to this study

Although the prioritisation exercise, detailed above, results in a list of company law operation-impact combinations by Member States, these are based on general indications of the extent of use of digital tools for each company law operation in each Member State and the magnitude of the collective impacts in each target area, considering the hypotheses presented in section 4.3 and the associated indicators. The first step of the causality assessment considers the more granular data collected on the impact indicators in each Member State. Based on these data, two but-for tests are developed for each potential causal link between a specific company law operation and a specific impact. The two but-for tests take the following format:

\textsuperscript{113} Honoré, Anthony. \emph{Causation in the Law}. Stanford Encyclopaedia of Philosophy.
\textsuperscript{114} Honoré, Anthony. \emph{Causation in the Law}. Stanford Encyclopaedia of Philosophy.
\textsuperscript{115} Honoré, Anthony. \emph{Causation in the Law}. Stanford Encyclopaedia of Philosophy.
\textsuperscript{116} Honoré, Anthony. \emph{Causation in the Law}. Stanford Encyclopaedia of Philosophy.
**Test 1:** But for the use of digital tool X in company law operation Y, would the impact (as represented by an impact indicator, a combination of impact indicators or a perceived impact) have occurred?

**Test 2:** But for the use of digital tool X in company law operation Y, would there be any other cause that would lead it to occur?

The first but-for test aims to determine whether the use of digital tools for the company law operation is a necessary condition for the impact to occur (i.e. as detailed above, ‘cause-in-fact’). The second but-for test aims to determine the strength of the association between the use of digital tools, as a necessary condition, and the impact by understanding if other factors are contributing to the impact and, if so, to what extent (i.e. following the principle of proximity outlined above).

This exercise results in a list of potential causal links at the Member State-level with two but-for questions to be answered for each potential link. The approach to answering these questions of causality, however, hinges significantly on data availability.

The assessment framework is structured such that it is both fluid and flexible with respect to the relative weight of quantitative and qualitative data and analysis, as well as expert input. In this context, each causal link assessment is carried out according to one of four loosely defined analytical approaches: **Approach A, Approach B, Approach C, No findings.** As can be seen in Figure 9, below, the reliance on expert input increases as the availability of relevant quantitative and qualitative data decreases. However, it is important to note that all causal link assessments are subject to validation by our Panel of Experts, regardless of the analytical approach used. The four analytical approaches, visually summarised in Figure 9, are described below:

- **Approach A** has been employed when data availability on relevant indicators is maximal, thus allowing for a comprehensive analysis involving both quantitative and qualitative elements, as well as (minimal) expert input to validate the results.

- **Approach B** has been employed when data availability meets the core criteria of expected data collection results, and allows for either a summarised mixed methods analysis with both qualitative and quantitative methods or an extensive quantitative analysis.

- **Approach C** has been the most used analytical approach. It has been used to conduct the causal link assessment when data availability on selected indicators was low with respect to expected data collection results. **Approach C** allows for either a summarised quantitative analysis or a summarised qualitative analysis, as well as extensive expert input. Where data availability is minimal, one of two outcomes occurs: i) no causal link can be established; ii) causal link can be established exclusively through expert input.

**Figure 9:** Visual representation of the different analytical approaches.

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117 It is worth noting that the collection of quantitative data was found to be extremely challenging, given the lack of relevant information publicly available.
Following this framework, experts in the field of company law, in collaboration with experts on the qualitative and quantitative data available and in consultation with key stakeholders (ETUC, ETUI and BusinessEurope), assess the available data related to each potential causal link to accept or reject each of the two but-for tests, providing, in each case, a rationale – example but-for tests are presented in Table 14. The combination of responses to the two but-for tests for each potential causal link provides the judgement on causality, which can be classified as follows:

Table 13: Potential outputs of causality assessment for each potential causal link.

<table>
<thead>
<tr>
<th>Causality judgement</th>
<th>Response to but-for test 1</th>
<th>Response to but-for test 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causal link established</td>
<td><strong>Reject</strong>: i.e. the use of digital tools for company operation X is a necessary condition for impact Y to occur</td>
<td><strong>Reject</strong>: i.e. no other factors contribute to impact Y</td>
</tr>
<tr>
<td>Digital tools a contributing, but not causal, factor – gauge of extent of contribution provided</td>
<td><strong>Reject</strong>: i.e. the use of digital tools for company operation X is a necessary condition for impact Y to occur</td>
<td><strong>Accept</strong>: i.e. other factors contribute to impact Y</td>
</tr>
<tr>
<td>Digital tools not a causal or contributing factor</td>
<td><strong>Accept</strong>: i.e. the use of digital tools for company operation X is not a necessary condition for impact Y to occur</td>
<td><strong>Accept</strong>: i.e. other factors contribute to impact Y</td>
</tr>
<tr>
<td>Insignificant impact or extent of use of digital tools</td>
<td><strong>Accept</strong>: i.e. the use of digital tools for company operation X is not a necessary condition for impact Y to occur</td>
<td><strong>Reject</strong>: i.e. no other factors contribute to impact Y</td>
</tr>
</tbody>
</table>

Table 14: But-for tests: Examples from each target area.

**But-for tests: Examples from each target area**

**Socio-economic impact target area:**
Example but-for tests for Estonia, relevant to the use of digital tools for company registration and filing and disclosure of company information, and based on the potential impact on the number of inactive limited liability companies:

*But for* the use of digital tools for company registration and filing and disclosure of company information, would the recorded increase in the number of inactive limited liability companies (i.e. 5,408 to 6,026 from 2010 to 2015) have occurred?

*But for* the use of digital tools for company registration and filing and disclosure of company information, would there be any other cause that would lead the reported impact to occur?

**Legal certainty impact target area**
Example but-for tests for Hungary, relevant to the use of digital tools for company registration and filing and disclosure of company information, and based on the potential impacts on the number of litigation cases in which legal certainty has been challenged:

*But for* the use of digital tools for company registration and filing and disclosure of company information, would the recorded decrease in the number of litigation cases where legal certainty has been challenged (i.e. 59,360 to 35,063 from 2012 to 2016) have occurred?

*But for* the use of digital tools for company registration and filing and disclosure of company information, would there be any other cause that would lead the recorded impact to occur?

**Fraudulent / illegal activities impact target area**
Example but-for tests for Italy, relevant to all four target areas and based on the positive impacts perceived by consulted stakeholders due to increased accessibility and interconnectedness of information throughout the company lifecycle:

*But for* the use of digital tools to conduct the four company law operations, would the positive impacts on fraudulent / illegal activities (as perceived by consulted stakeholders) have occurred?

*But for* the use of digital tools to conduct the four company law operations, would there be any other cause that would lead the recorded impact to occur?

On completion of the assessment of potential causal links, identified at the Member State-level, the final step of the causality assessment is undertaken. For this final step, undertaken for each impact target area, the Member State-level causality judgements are viewed in light of pan-EU datasets to
provide clear conclusions on causality in relation to the research hypothesis detailed in section 4.3.

6.2 Assessment of causal links: results and conclusions

For each impact target area, this section first summarises the results of the assessment of potential Member State-level causal links. Subsequently, it presents clear EU-wide conclusions on the extent to which the use of digital tools for company law operations impacts the three impact target areas.

As detailed in Appendix V, a total of 38 potential causal links have been reviewed by the study team’s panel of experts. The socio-economic impact target area accounts for the majority of the potential causal links – 31. In addition, the data collected and analysed led to the examination of four potential causal links in the legal certainty target area and three potential causal links relevant to the fraudulent / illegal activities target area.

For the socio-economic impact target area, 31 potential causal links were assessed covering nine of the 14 Member States (Bulgaria, Germany, Estonia, Hungary, Italy, Netherlands, Poland, Portugal and the UK). The exploration of causal links in the five remaining Member States was not developed further as: two (Belgium and Romania) have limited availability and use of digital tools across the four company law operations; and in three (Denmark, France, Luxembourg), limited impacts were reported in relation to the socio-economic impact target area.

Regarding the 31 potential causal links assessed, causality has been established between the use of digital tools for company law operations and identified impacts in 10 instances covering all nine Member States. In a further 18 instances, the use of digital tools has been considered as contributing, to some extent, to the impact, although no causality can be established. In these cases, the extent to which the use of digital tools contributed to the identified impact is clearly discussed. The remaining three potential causal links have been rejected on the basis of insufficient impacts.

Considering the instances where causality has been established, it is notable that these exclusively relate to the positive impact of the use of digital tools on the efficiency of conducting the four company law operations.

For instance, in the United Kingdom, there are clear quantitative data illustrating the increased efficiency with which company registration and filing and disclosure of company information can be conducted using digital tools compared with offline processes:

- **Company registration**: if conducted entirely online, the registration process takes around 24 hours and costs £12. To conduct the same operation in one day using offline processes costs over eight times more (£100) and to conduct the same operation offline without using the expedited same day service takes 8-10 days and costs £40; and

- **Filing and disclosure of company information**: although not all company information can be filed digitally in the UK, those processes that can bring significant reductions in cost and time. As an example, a paper application to change the name of a company takes up to five working days from receipt of the application and costs £10; an identical online submission takes, on average, 24 hours and costs £8. For both offline and online cases, a guaranteed same day service is possible. However, the offline same day service costs £50 compared with £30 for the online same day service. Another example relates to filing and disclosing subscribed capital: online submission costs £13 and offline costs £44.

Similarly, Hungarian stakeholders report that the introduction of digital tools for company registration has reduced the time for a successful application from one to two weeks to one to two days or, in some cases, a matter of hours.

Beyond the cases where causality has been established, the majority of the potential causal links assessed in the socio-economic impact target area (18) revealed the use of digital tools for company law operations to be a contributing, but not a causal, factor. In such instances, it is important to examine the extent of the contribution provided by the use of digital tools and the other contributing factors. In all but two of these 18 cases, the use of digital tools for company law operations was determined to be a minimal contributing factor.

121 Source: representative of the National Office for the Judiciary.
For instance, in Bulgaria, relevant indicators were examined in relation to the hypothesis that the availability and use of digital tools for company registration leads to the movement of companies (and their activity) from Member States with higher obligations to employees to Member States with reduced obligations. Considering this hypothesis, related indicators highlighted that: i) Bulgaria has the lowest average labour costs per hour worked of all EU Member States (EUR 3.80 per hour worked compared with the EU average of EUR 22.59 and the highest, in Denmark, of EUR 42 per hour worked[^122]); and ii) the annual number of companies registered on the Bulgarian commercial register, run by the Bulgarian Registry Agency, increased from 39,478 in 2010 to 56,410 in 2016[^123].

In this situation, it is considered that other factors contribute significantly to the increase in company registration in Bulgaria, in particular when considering cross-border company registration. Such prominent factors include: the business environment in Bulgaria, including the market strength, the purchasing power of the population and the influence of labour costs, working conditions, worker’s skills and corporate tax costs. Particularly relevant to cases of cross-border company registration, the business environment of a company’s origin Member State and geography play important roles. The importance of these other factors in influencing the micro-level decisions to register companies in Bulgaria (the level at which the role of the available digital tools is relevant) leads to the logical rejection of the potential causality between the use of digital tools for company registration and the increase in companies registered. However, given that the use of digital tools is considered to ease the process of company registration, it is considered to have a very minimal contributory role in the decision-making process.

The remaining two cases, where the use of digital tools is considered to be a contributing factor to the recorded impact, relate to the hypothesis that the use of digital tools for filing and disclosure of company information leads to increased accessibility and transparency of company information for all stakeholders. This impact was reported solely through stakeholder perceptions and was raised in both Hungary and Bulgaria. Considering the first but-for test in this case, it is determined that the use of digital tools is a necessary factor in the noted increase in the accessibility and transparency of company information, as the provision of this information in digital form makes the government’s job of publishing it markedly easier. However, the use of digital tools in this instance is not considered to be causal as a number of factors impact the accessibility and transparency of company information; most notably, the suitability of a Member State’s business register is key in ensuring any benefit derived from the digital submission of company information by businesses is translated into increased accessibility and transparency for all stakeholders.

This is further evidenced by the fact that, regardless of a digitalised filing and disclosure process, the accessibility of company information on the Bulgarian business register is hindered by linguistic challenges, as the information is only provided in Bulgarian. Further challenges in this regard include the requirement to pay access costs in some Member States (for example, France) and restricted search functionalities. As such, the role of digital tools in this case is important but still reliant on the other factors for the impact to be achieved.

The three remaining potential causal links related to the hypothesis that the use of digital tools for company registration leads to an increase in companies not performing any economic activity. Raised in relation to impact indicators identified in Estonia, Hungary and the United Kingdom, these three potential causal links were, upon closer examination of the underlying impact data, rejected based on an insufficient level of impact.

For the legal certainty impact target area, causality has not been established for any of the four potential causal links examined (across Hungary, Estonia, Poland and Portugal). In fact, across all four instances, the use of digital tools has been found to be a contributing, but not causal, factor in relation to positive impacts on legal certainty. This finding is in contrast to the overarching hypothesis, documented in section 4.3, related to this impact target area.

In three of the four cases examined, the use of digital tools is considered to play an important role as a necessary condition, alongside other contributory factors. These instances all rely solely on stakeholder perceptions. For instance, in Portugal, the potential causal link was in relation to the use of digital tools for company registration, filing and disclosure of company information and mergers. Consulted stakeholders reported that, due to the digital tools improving accessibility and availability of company information and the use of strong digital authentication mechanisms, an increase in legal certainty had been achieved. Although the consulted stakeholders clearly linked the


[^123]: Bulgarian Registry Agency website: www.registryagency.bg
use of digital tools across these company law operations to the increase in legal certainty, a number of complementary and independent factors also play a role in the realisation of the noted impact. These factors include the strong authentication mechanisms in use, which complement the use of digital tools, and the suitability of the Portuguese business register, which also has a significant influence on the availability and accessibility of business information. As such, the digital tools in use, in this instance, can be characterised as an important contributing factor, but not a causal factor. Similar rationales are put forward with regard to the hypotheses in Estonia and Poland.

The remaining case relates to the use of digital tools for company registration and filing and disclosure of company information in Hungary, and the recorded decrease in litigation cases where legal certainty has been challenged. It is considered that the use of digital tools for these company law operations plays a role in improving legal certainty, by improving accessibility to accurate information on a company, and thus decreasing the number of litigation cases in this regard. However, the role of digital tools in the recorded impact is minimal, given the existence of significant other factors, such as the role of mediation and conciliation, and its comparative lack of proximity to the indicator being examined. As such, the use of digital tools is considered to be a minor contributing factor.

For the fraudulent / illegal activities target area, causality has not been established for any of the three potential causal links examined (covering Italy, Portugal and the United Kingdom). For two of the three cases, the use of digital tools is considered to play a moderate contributory role, but not a causal role. In these instances, the strength of the evidence and the influence of other factors lead to this assessment.

In the United Kingdom, for instance, consulted stakeholders perceived that the use of digital tools – in particular, the PROOG system, which was implemented to ensure secure and authentic filing and disclosure of company information – has resulted in a reduction in fraudulent activity. However, the PROOG system is a voluntary service, whose use has been limited. This point, in combination with the impact of increased law enforcement focus on combating illegal and fraudulent activities linked to these company law operations, means that the use of digital tools is a contributing factor to the perceived reduction in fraudulent / illegal activities, but it is not a causal factor. In Portugal, stakeholders determined that the use of digital tools allows for the interconnectedness of company information with fiscal authority’s data and social security data. However, it is not known in practice if this is done, or is possible. In similar fashion to the example of the United Kingdom, other factors, such as law enforcement focus and general justice system efficiency would play more important roles in driving the levels of fraudulent / illegal activities.

The final case concerns a potential causal link between the use of digital tools across all company law operations and a reduction in fraudulent / illegal activities in Italy. However, upon closer examination of the available data, it demonstrates insufficient changes in the indicators identified (namely convictions for tax evasion, convictions for ID fraud, convictions for financial crime and the size of the shadow economy). As such, no causality can be established on the basis of insufficient impact.

Table 15, below, and Figure 10, present an overview of the results for the above-summarised causality assessments. Following this, Table 16, presents the full details associated with each causality assessment, highlighting the primary but-for test, the Member State, impact target area, company law operation, the causality judgement and the rationale for that judgement.

Table 15: Results overview: Member State causality assessments.

<table>
<thead>
<tr>
<th>Causality judgement</th>
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</thead>
<tbody>
<tr>
<td>Causal link established</td>
<td>10</td>
</tr>
<tr>
<td>Digital tools a contributing, but not causal, factor</td>
<td>24</td>
</tr>
<tr>
<td>Digital tools not a causal or contributing factor</td>
<td>0</td>
</tr>
<tr>
<td>Insignificant impact or extent of use of digital tools</td>
<td>4</td>
</tr>
</tbody>
</table>
Figure 10: Visualisation of the results overview: Member State causality assessments.

Causality of 38 potential links examined:
- 10 causal links established
- 24 digital tools a contributing, but not causal, factor
- 4 insignificant impact or extent of use of digital tools

- Socio-economic impact target area
- Legal certainty impact target area
- Fraudulent / illegal activities impact target area
### Table 16: Full Results: Member State causality assessments.

<table>
<thead>
<tr>
<th>Causality assessment</th>
<th>Associate d Member State(s)</th>
<th>Causal links established?</th>
<th>Target area</th>
<th>Relevant company law operations</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>But for the use of digital tools for company registration, would the movement of companies (indicated by increased registered companies) to Bulgaria to exploit the low average labour costs have occurred?</em></td>
<td>Bulgaria</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Company registration</td>
<td>Such practices occurred prior to the implementation of digital tools for company registration; although the availability of digital tools may, in many cases, facilitate the movement of companies, it is not a key criterion in the decision-making process. As evidenced by case study 1 (see Chapter 9), the digital tools available in some Member States (in this case Poland) may not be easy to use for foreigners.</td>
</tr>
<tr>
<td><em>But for the use of digital tools for company registration, would the movement of companies (indicated by increased registered companies) to Bulgaria to exploit the low corporate tax environment have occurred?</em></td>
<td>Bulgaria</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Company registration</td>
<td>Such practices occurred prior to the implementation of digital tools for company registration; although the availability of digital tools may, in many cases, facilitate the movement of companies, it is not a key criterion in the decision-making process. As evidenced by case study 1 (see Chapter 9), the digital tools available in some Member States (in this case Poland) may not be easy to use for foreigners.</td>
</tr>
<tr>
<td><em>But for the use of digital tools for filing and disclosure of company information, would the perceived increases in the availability and transparency of company information have occurred?</em></td>
<td>Bulgaria</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Filing and disclosure of company information</td>
<td>Digital tools play an important role in ensuring transparency and availability of information. However, the suitability of business registers at Member State level also plays a major role in this context.</td>
</tr>
<tr>
<td><em>But for the use of digital tools across all four company operations, would the perceived increase in operational efficiency have been achieved?</em></td>
<td>Bulgaria</td>
<td>Causal link established</td>
<td>Socio-economic impacts</td>
<td>Company registration, dissolution, filing and</td>
<td>As reported by stakeholders, digital tools play a role of primary importance in improving the efficiency of the four company law operations.</td>
</tr>
<tr>
<td>Causality assessment</td>
<td>Associate Member State(s)</td>
<td>Causal links established?</td>
<td>Target area</td>
<td>Relevant company law operations</td>
<td>Explanation</td>
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<tr>
<td>But for the use of digital tools for company registration, would the recorded increase in companies registered in Bulgaria between 2010 and 2016 have occurred?</td>
<td>Bulgaria</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Company registration</td>
<td>Although digital tools for company registration may act as a facilitator, their existence is not a key factor in a decision to establish a company. Additionally, for foreign persons wishing to register cross-border in Bulgaria, the use of the available digital tools is not so simple, as a specialised civil officer at the Registry Agency has to use the digital tools.</td>
</tr>
<tr>
<td>But for the use of digital tools for company dissolution, would the recorded increase in the number of enterprise deaths in Bulgaria between 2010 and 2014 have occurred?</td>
<td>Bulgaria</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Company dissolution</td>
<td>Although digital tools for company dissolution may act as a facilitator, their existence is not a key factor in a decision to liquidate a company. Additionally, for foreign persons wishing to register cross-border in Bulgaria, the use of the available digital tools is not so simple, as a specialised civil officer at the Registry Agency has to use the digital tools.</td>
</tr>
<tr>
<td>But for the use of digital tools for mergers, would the reported increase in cross-border mergers between 2008 and 2012 have occurred?</td>
<td>Germany</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Mergers</td>
<td>The increase in cross-border merger activity is significant and Germany has moderate use of digital tools for merger operations. However, additional factors could justify this (e.g. CBMD)</td>
</tr>
<tr>
<td>But for the use of digital tools for company registration, would the perceived movement of companies from Germany to Member States with lower average labour costs have occurred?</td>
<td>Germany</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Company registration</td>
<td>Such practices occurred prior to the implementation of digital tools for company registration; although the availability of digital tools may, in</td>
</tr>
<tr>
<td>Causality assessment</td>
<td>Associate Member State(s)</td>
<td>Causal links established?</td>
<td>Target area</td>
<td>Relevant company law operations</td>
<td>Explanation</td>
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<tr>
<td>But for the use of digital tools for company registration, would the perceived movement of companies from Germany to other Member States based on labour force suitability have occurred?</td>
<td>Germany</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Company registration</td>
<td>Many cases, facilitate the movement of companies, it is not a key criterion in the decision-making process. As evidenced by case study 1 (see Chapter 9), the digital tools available in some Member States (in this case Poland) may not be easy to use for foreigners.</td>
</tr>
<tr>
<td>But for the use of digital tools across all four company operations, would the perceived increase in operational efficiency have been achieved?</td>
<td>Germany</td>
<td>Causal link established</td>
<td>Socio-economic impacts</td>
<td>Company registration, dissolution, filing and sharing of company information, mergers</td>
<td>As reported by stakeholders, digital tools play a role of primary importance in improving the efficiency of the four company law operations in comparison with former methods.</td>
</tr>
<tr>
<td>But for the use of digital tools for company registration and filing and disclosure of company information, would the reported increase in inactive companies between 2010 and 2015 have occurred?</td>
<td>Estonia</td>
<td>N/A</td>
<td>Socio-economic impacts</td>
<td>Company registration, and filing and sharing of company information</td>
<td>Impact not significant enough for any causality assessment to be necessary.</td>
</tr>
<tr>
<td>Causality assessment</td>
<td>Associate d Member State(s)</td>
<td>Causal links established?</td>
<td>Target area</td>
<td>Relevant company law operations</td>
<td>Explanation</td>
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<tr>
<td>But for the use of digital tools across all four company operations, would the perceived increase in operational efficiency have been achieved?</td>
<td>Estonia</td>
<td>Causal link established</td>
<td>Socio-economic impacts</td>
<td>Company registration, dissolution, filing and sharing of company information, mergers</td>
<td>As reported by stakeholders, digital tools play a role of primary importance in improving the efficiency of the four company law operations in comparison with former methods.</td>
</tr>
<tr>
<td>But for the use of digital tools for company registration and filing and disclosure of company information, would the reported increase in inactive companies between 2010 and 2016 have occurred?</td>
<td>Hungary</td>
<td>N/A</td>
<td>Socio-economic impacts</td>
<td>Company registration, and filing and sharing of company information</td>
<td>Impact not significant enough for any causality assessment to be necessary.</td>
</tr>
<tr>
<td>But for the use of digital tools for filing and disclosure of company information, would the perceived increases in the availability and transparency of company information have occurred?</td>
<td>Hungary</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Filing and sharing of company information</td>
<td>Digital tools play an important role in ensuring transparency and availability of information. However, the suitability of business registers at Member State level also plays a major role in this context.</td>
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<tr>
<td>But for the use of digital tools for company registration and filing and disclosure of company information, would the perceived decrease in the number of forms and documents to be submitted have occurred?</td>
<td>Hungary</td>
<td>Causal link established</td>
<td>Socio-economic impacts</td>
<td>Company registration, and filing and sharing of company information</td>
<td>As reported in the case of Hungary, the introduction of digital tools for these operations also brought about a reduction in the forms and documents required.</td>
</tr>
<tr>
<td>But for the use of digital tools across all four company operations, would the recorded and perceived increase in operational efficiency have been achieved?</td>
<td>Hungary</td>
<td>Causal link established</td>
<td>Socio-economic impacts</td>
<td>Company registration, dissolution, filing and sharing of company information, mergers</td>
<td>As reported by stakeholders, digital tools play a role of primary importance in improving the efficiency of the four company law operations in comparison with former methods.</td>
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<tr>
<td>Causality assessment</td>
<td>Associate Member State(s)</td>
<td>Causal links established?</td>
<td>Target area</td>
<td>Relevant company law operations</td>
<td>Explanation</td>
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<td>But for the use of digital tools for company dissolution, would the recorded</td>
<td>Hungary</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Company dissolution</td>
<td>Although digital tools for company dissolution may act as a facilitator, their existence is not a key factor in a decision to liquidate a company.</td>
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<td>increase in the number of enterprise deaths in Hungary between 2008 and 2014 have</td>
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<td>occurred?</td>
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<td>But for the use of digital tools for mergers, would the reported increase in</td>
<td>Italy</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Mergers</td>
<td>The increase in cross-border merger activity is significant and Italy has moderate use of digital tools for merger operations. However, additional factors could justify this (e.g. CBMD)</td>
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<td>cross-border mergers between 2008 and 2012 have occurred?</td>
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<tr>
<td>But for the use of digital tools across all four company operations, would the</td>
<td>Italy</td>
<td>Causal link established</td>
<td>Socio-economic impacts</td>
<td>Company registration, dissolution, filing and sharing of company information, mergers</td>
<td>As reported by stakeholders, digital tools play a role of primary importance in improving the efficiency of the four company law operations in comparison with former methods.</td>
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<td>perceived increase in operational efficiency have been achieved?</td>
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<tr>
<td>But for the use of digital tools for company dissolution, would the recorded</td>
<td>Italy</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Company dissolution</td>
<td>Although digital tools for company dissolution may act as a facilitator, their existence is not a key factor in a decision to liquidate a company.</td>
</tr>
<tr>
<td>increase in the enterprise death rate in Italy between 2008 and 2014 have occurred?</td>
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<td></td>
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</tr>
<tr>
<td>But for the use of digital tools for mergers, would the reported increase in cross-</td>
<td>Netherlands (s)</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Mergers</td>
<td>The increase in cross-border merger activity is significant and the Netherlands has moderate use of digital tools for merger operations. However, additional factors could justify this (e.g. CBMD)</td>
</tr>
<tr>
<td>border mergers between 2008 and 2012 have occurred?</td>
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</tr>
<tr>
<td>But for the use of digital tools across all four company operations, would the</td>
<td>Netherlands (s)</td>
<td>Causal link established</td>
<td>Socio-economic impacts</td>
<td>Company registration, dissolution, filing and sharing of company information, mergers</td>
<td>As reported by stakeholders, digital tools play a role of primary importance in improving the efficiency of the four company law operations in comparison with former methods.</td>
</tr>
</tbody>
</table>
### Causality assessment

<table>
<thead>
<tr>
<th>But for the use of digital tools for company registration, would the recorded increases in active companies (2009-2014) and registered companies (2010 to 2016) have occurred?</th>
<th>Netherland(s)</th>
<th>Digital tools a contributing but not causal factor</th>
<th>Socio-economic impacts</th>
<th>Company registration</th>
<th>Although digital tools for company registration may act as a facilitator, their existence is not a key factor in a decision to establish a company. Additionally, in the Netherlands, although the use of digital tools for registration is extensive, it is not direct, end-to-end online as a physical meeting with the registry is required.</th>
</tr>
</thead>
<tbody>
<tr>
<td>But for the use of digital tools for company registration, would the perceived movement of companies to Poland based on labour force suitability have occurred?</td>
<td>Poland</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Company registration</td>
<td>Such practices occurred prior to the implementation of digital tools for company registration; although the availability of digital tools may, in many cases, facilitate the movement of companies, it is not a key criterion in the decision-making process. As evidenced by case study 1 (see Chapter 9), the digital tools available in some Member States (in this case Poland) may not be easy to use for foreigners.</td>
</tr>
<tr>
<td>But for the use of digital tools for company registration, filing and disclosure of company information and company dissolution, would the perceived increase in operational efficiency have been achieved?</td>
<td>Poland</td>
<td>Causal link established</td>
<td>Socio-economic impacts</td>
<td>Company registration, dissolution, filing and sharing of company information</td>
<td>As reported by stakeholders, digital tools play a role of primary importance in improving the efficiency of the three company law operations in comparison with former methods.</td>
</tr>
<tr>
<td>But for the use of digital tools for company dissolution, would the recorded increases in enterprise deaths (2010-2013) and the enterprise death rate (2008-2014) in Poland have occurred?</td>
<td>Poland</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Company dissolution</td>
<td>Although digital tools for company dissolution may act as a facilitator, their existence is not a key factor in a decision to liquidate a company. As evidenced in case study 1, even though digital tools are available for registration, they are still difficult for</td>
</tr>
<tr>
<td>Causality assessment</td>
<td>Associated Member State(s)</td>
<td>Causal links established?</td>
<td>Target area</td>
<td>Relevant company law operations</td>
<td>Explanation</td>
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</tr>
<tr>
<td>But for the use of digital tools for company registration and filing and disclosure of company information, would the recorded increase in enterprise births in Poland between 2012 and 2014 have occurred?</td>
<td>Poland</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Company registration, and filing and sharing of company information</td>
<td>Although digital tools for company registration and filing and disclosure of company information may act as a facilitator, their existence is not a key factor in a decision to establish a company. As evidenced in case study 1, even though digital tools are available for registration, they are still difficult for non-national EU citizens to operate as they are only available in Polish.</td>
</tr>
<tr>
<td>But for the use of digital tools for company registration, filing and disclosure of company information, would the perceived increase in operational efficiency have been achieved?</td>
<td>Portugal</td>
<td>Causal link established</td>
<td>Socio-economic impacts</td>
<td>Company registration, filing and sharing of company information, mergers</td>
<td>As reported by stakeholders, digital tools play a role of primary importance in improving the efficiency of the four company law operations in comparison with former methods.</td>
</tr>
<tr>
<td>But for the use of digital tools for company registration and filing and disclosure of company information, would the reported increase in inactive companies have occurred?</td>
<td>United Kingdom</td>
<td>N/A</td>
<td>Socio-economic impacts</td>
<td>Company registration, and filing and sharing of company information</td>
<td>Impact not significant enough for any causality assessment to be necessary.</td>
</tr>
<tr>
<td>But for the use of digital tools for company registration and filing and disclosure of company information, would the perceived increase in operational efficiency have been achieved?</td>
<td>United Kingdom</td>
<td>Causal link established</td>
<td>Socio-economic impacts</td>
<td>Company registration, and filing and sharing of company information</td>
<td>As reported by stakeholders, digital tools play a role of primary importance in improving the efficiency of the two company law operations in comparison with former methods.</td>
</tr>
<tr>
<td>But for the use of digital tools for company registration and filing and disclosure of company information, would the recorded increases in enterprise births (2012-2014)</td>
<td>United Kingdom</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Socio-economic impacts</td>
<td>Company registration, and filing and sharing</td>
<td>Although digital tools for company registration and filing and disclosure of company information may act as a facilitator, their existence is not a key factor in a decision to establish a company. As evidenced in case study 1, even though digital tools are available for registration, they are still difficult for non-national EU citizens to operate as they are only available in Polish.</td>
</tr>
</tbody>
</table>
## Causality assessment

<table>
<thead>
<tr>
<th>Causal links established?</th>
<th>Target area</th>
<th>Relevant company law operations</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital tools a contributing but not causal factor</td>
<td>Legal certainty impacts</td>
<td>Company registration, dissolution, filing and sharing of company information</td>
<td>The stakeholders consulted (i.e. a government entity) directly linked an increase in the legal certainty of these three company law operations to the use of digitalised processes. However, other factors contribute to increased business awareness and availability of company information. In particular, the suitability of a Member State’s business register.</td>
</tr>
<tr>
<td>Digital tools a contributing but not causal factor</td>
<td>Legal certainty impacts</td>
<td>Company registration, and filing and sharing of company information</td>
<td>The use of digital tools for these operations improves the availability and accessibility of accurate information on the tax and accounting situation of a company, which it is considered could lead to an increase in legal certainty and the reduction of the likelihood that a company may be sued. However, other causes for the recorded impact include the increased use of conciliation or mediation.</td>
</tr>
<tr>
<td>Digital tools a contributing but not causal factor</td>
<td>Legal certainty impacts</td>
<td>Filing and sharing of company information</td>
<td>The stakeholders consulted (i.e. a Polish legal firm) directly linked an increase in the legal certainty of this operation to the fact that it can be conducted digitally and the increased transparency that brings. However, other factors contribute to increased business awareness and availability of company information. In</td>
</tr>
</tbody>
</table>
### Causality assessment

<table>
<thead>
<tr>
<th>Causality assessment</th>
<th>Associate Member State(s)</th>
<th>Causal links established?</th>
<th>Target area</th>
<th>Relevant company law operations</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>But for the use of digital tools for company registration, filing and disclosure of company information and mergers, would the perceived increase in legal certainty have occurred?</td>
<td>Portugal</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Legal certainty impacts</td>
<td>Company registration, filing and sharing of company information, mergers</td>
<td>particular, the suitability of a Member State's business register. The stakeholders consulted (i.e. a government entity) directly linked an increase in the legal certainty of this operation to the fact that it can be conducted digitally, the reduced reliance on third parties this brings and the increased transparency of applicable rules. The use of strong authentication mechanisms is a complementary factor that also contributes to the increased legal certainty. However, other factors also contribute to increased business transparency, which subsequently increases legal certainty. In particular, the suitability of a Member State's business register plays an important role.</td>
</tr>
<tr>
<td>But for the use of digital tools across all company law operations, would the recorded perception that fraudulent activities have been reduced have occurred?</td>
<td>Italy</td>
<td>N/A</td>
<td>Fraudulent / illegal activities impacts</td>
<td>Company registration, dissolution, filing and sharing of company information, mergers</td>
<td>Impact not significant enough for any causality assessment to be necessary; quantitative data suggests no change</td>
</tr>
<tr>
<td>But for the use of digital tools for company registration, filing and disclosure of company information and mergers, would the recorded perception that fraudulent activities have been reduced have occurred?</td>
<td>Portugal</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Fraudulent / illegal activities impacts</td>
<td>Company registration, filing and sharing of company information, mergers</td>
<td>The use of digital tools allows for automatic communication of data from the business registry to other entities such the fiscal authority and social security. This in turn results in an increased ability to detect fraudulent activities.</td>
</tr>
</tbody>
</table>
### Causality assessment

<table>
<thead>
<tr>
<th>Causality assessment</th>
<th>Associate d Member State(s)</th>
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<th>Target area</th>
<th>Relevant company law operations</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>But for the use of digital tools for company registration and filing and disclosure of company information, would the recorded perception that fraudulent activities have been reduced have occurred?</td>
<td>United Kingdom</td>
<td>Digital tools a contributing but not causal factor</td>
<td>Fraudulent / illegal activities impacts</td>
<td>Company registration, and filing and sharing of company information</td>
<td>The use of digital tools allows for automatic communication of data from the business registry to other entities such the fiscal authority and social security. This in turn results in an increased ability to detect fraudulent activities.</td>
</tr>
</tbody>
</table>
Conclusions on the socio-economic impact target area

An overview of the hypotheses and the conclusions for each hypothesis, considering the causality assessments presented above and the triangulation of EU-wide datasets, are provided in Table 17, below. Each conclusion first highlights whether the proposed hypothesis has been accepted or rejected (i.e. whether a causal link exists in relation to the impact examined) before explaining the rationale for that judgement.

Table 17: Socio-economic impact target area: Hypotheses and conclusions.

<table>
<thead>
<tr>
<th>Impact hypothesis</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact 1: the proportion of limited liability companies not performing any economic activity will increase as it becomes faster and cheaper to establish companies</td>
<td>The initial hypothesis is rejected on the basis that evidence relating to the proposed impact found it to be insignificant. Taking into account the Member State level causality propositions (as proposed in Estonia, Hungary and the UK), relevant literature, the perceptions of EU-level stakeholders and expert opinion, it is considered that the identified changes in the number of companies not performing any economic activity (i.e. inactive companies) are not significant enough to deem a causality assessment. As such, there is limited notable impact in relation to the number of inactive companies and causality between the use of digital tools for company registration and this limited impact cannot be established.</td>
</tr>
<tr>
<td>Impact 2: the efficiency of cross-border merger operations will increase in line with the increased use of digital tools in company operations</td>
<td>The initial hypothesis is rejected on the basis that the role played by digital tools in the impact reported is minimal. Taking into account the Member State-level causality propositions (as proposed in Germany, Italy and the Netherlands), relevant literature, the perceptions of EU-level stakeholders and expert opinion, it is considered that, although the availability and use of digital tools play a small role in facilitating mergers, the identified increases in cross-border mergers are primarily the result of other factors, most prominently Directive 2005/56/EC on cross-border mergers of limited liability companies. Further evidence distancing the role of digital tools from the identified impacts include: i) the reduction in cross-border mergers in Denmark (for cases where the seat of the acquiring company is in Denmark, as well as cases where the seat of the merging company is in Denmark), which has available direct, end-to-end online tools for merger operations; and ii) the significant increases noted in Member States where there is limited or no availability or use of digital tools for merger operations (including Luxembourg, France, Belgium and the UK).</td>
</tr>
<tr>
<td>Impact 3: the use of digital tools will lead to the movement of companies (and their activities) to Member States with varying rules on working conditions (for the employee).</td>
<td>The initial hypotheses are rejected on the basis that the role played by digital tools in the impact reported is minimal. Taking into account the Member State-level causality propositions (as proposed in Bulgaria, Germany and Poland), relevant literature, the perceptions of EU-level stakeholders and expert opinion, it is considered that the availability and use of digital tools plays a small role in facilitating the movement of companies between Member States or the cross-border establishment of companies (considering a variety of reasons including reduced labour costs, increases in working hours, reduced corporate taxation and better skilled workforces). However, the influence of digital tools in such decisions is minimal when compared with other factors, such as the business environment of both the original and destination Member States (including all the elements listed in combination), the purchasing power of the population and geography. This conclusion is further evidenced by data that, when placed in the context of other indicators, supports the rejection of the initial hypothesis. For instance: • Hungary: average labour costs are significantly lower in Hungary than most other Member States and corporate tax rates are also low, yet the number of enterprises and the number of enterprise births have decreased in recent years.</td>
</tr>
</tbody>
</table>
### Impact hypothesis

**Impact 5:** the use of digital tools will lead to the movement of companies to Member States that have lower corporate tax rates

- **Romania,** which has lower average labour costs than all Member States bar Bulgaria, and low corporate tax rates has experienced extensive enterprise growth in recent years; however, Romania has extremely restricted availability and use of digital tools.
- **Polish** stakeholders report that many companies based in other Member States establish in Poland to access skilled IT workers; however, this happens regardless of the fact that the available digital tools are extremely difficult for non-national EU citizens to use, as they are only available in Polish. It is reported that, in practice, such businesses from other Member States would need to employ a local lawyer to register in Poland.

As a German stakeholder put it: 'The availability of digital tools for businesses is not a particular incentive for initiating one of the company operations'

### Conclusion

The initial hypothesis is rejected on the basis that other factors (primarily the suitability of Member State online business registers) play an equally, if not more, important role than the use of digital tools in the reported impact.

Taking into account the Member State-level causality propositions (as proposed in Bulgaria and Hungary), relevant literature, the perceptions of EU-level stakeholders and expert opinion, it is considered that digital tools for filing and disclosure of company information play a significant role in increasing the accessibility and transparency of company information for all stakeholders. The reported levels of accessibility and transparency are markedly harder to achieve without the capability to submit company information digitally. However, causality has not been established between the use of digital tools for filing and disclosure of company information as, although its role is important, the suitability of each Member State’s online business register is an equally, if not more important, factor with regard to achieving the reported increase in accessibility and transparency of company information.

This is further demonstrated by highlighting the following characteristics of a business register, which can hinder the accessibility and transparency of the information held within the register and cannot be influenced by the use of digital tools for filing and disclosure of company information: access costs (often small); linguistic challenges; and the design and functionalities of the register. For example, in Bulgaria, it is possible to search the business registry in English but all company records are in Bulgarian, which limits accessibility to companies from other Member States. Additionally, in France, access to the majority of information is only possible for a fee.

### Impact 6: the use of digital tools will improve access to business information for all stakeholders, including employees

- The initial hypothesis is accepted on the basis that the significant reported increases in operational efficiency across the four company law operations are predominantly the result of the digital tools in use. Causality is thus established.

Taking into account the Member State-level causality propositions (as proposed across many Member States), relevant literature, the perceptions of EU-level stakeholders and expert opinion, it is considered that digital tools play a key role in the reported increased efficiency of the four company law operations. In Hungary, for example, the registration time has been reduced from one to two weeks to one to two days or a matter of hours in some cases as a result of the availability of digital tools. In the UK, the time and costs associated with company registration are reduced; the available digital tools allow registration within 24 hours for £12 compared with £40 and 8-10 days for postal registration and £100 and 24 hours for same-day postal registration. Furthermore, there are no other factors noted which would influence the efficiency of the company law operations.

However, it is not possible to extend this established causality to examined increases in enterprise births and deaths, and increases in active or registered companies.

### Impact 7: the use of digital tools will increase the efficiency with which the four company operations can be conducted

The initial hypothesis is accepted on the basis that the significant reported increases in operational efficiency across the four company law operations are predominantly the result of the digital tools in use. Causality is thus established.

Taking into account the Member State-level causality propositions (as proposed across many Member States), relevant literature, the perceptions of EU-level stakeholders and expert opinion, it is considered that digital tools play a key role in the reported increased efficiency of the four company law operations. In Hungary, for example, the registration time has been reduced from one to two weeks to one to two days or a matter of hours in some cases as a result of the availability of digital tools. In the UK, the time and costs associated with company registration are reduced; the available digital tools allow registration within 24 hours for £12 compared with £40 and 8-10 days for postal registration and £100 and 24 hours for same-day postal registration. Furthermore, there are no other factors noted which would influence the efficiency of the company law operations.

However, it is not possible to extend this established causality to examined increases in enterprise births and deaths, and increases in active or registered companies.

### Conclusions on the legal certainty impact target area

As detailed in section 4.3, the overarching hypothesis in relation to the assessment of causal links between the use of digital tools for company law operations and any impacts on legal certainty was as follows:
The use of digital tools for cross-border direct online company registration leads to a situation where the legal provisions governing the authentication processes of the required documentation do not have the same legal value across Member States, and instead allow for digital authentication methods that are not considered to have the same legal validity.

Based on the evidence provided across the 14 Member States examined, and the Member State-level causality assessments analysed above, the initial hypothesis related to the impacts of the use of digital tools on legal certainty has been rejected. No evidence has been collected suggesting that the use of digital tools for company law operations could have a negative impact on legal certainty. In fact, all stakeholders perceive the impacts of using digital tools for company law operations on legal certainty to be positive. However, this relationship is also not determined to be causal.

Although it is clear that many stakeholders perceive the increased digitalisation of company law operations to bring increased legal certainty, there are a number of important factors which influence whether the benefits to legal certainty are, in fact, derived from the use of digital tools. These factors include the need for strong security and authentication mechanisms, which complement the use of digital tools and play a vital role in establishing trust in the digital services of a Member State’s government. Given that the key comment of stakeholders in relation to improving legal certainty related to improving accessibility and transparency of information, another influencing factor is the suitability of a Member State’s business register.

Conclusions on the fraudulent / illegal activities impact target area

As detailed in section 4.3, the overarching hypothesis in relation to the assessment of causal links between the use of digital tools for company law operations and any impacts on fraudulent / illegal activities was as follows:

The use of digital tools for cross-border direct online company registration leads to the facilitation of fraud-related offences (e.g. identity theft, money laundering) as a result of less rigorous authentication control measures when registering a new company.

Based on the evidence provided across the 14 Member States examined, and the Member State-level causality assessments analysed above, the initial hypothesis related to the impacts of the use of digital tools on fraudulent / illegal activities has been rejected. In fact, in a similar fashion to the conclusions on legal certainty, it is considered by the majority of stakeholders that the use of digital tools for company law operations will lead to a reduction in fraudulent / illegal activities. However, this positive relationship is not determined to be causal.

Although the stakeholders in a number of Member States consider there to be a positive causal link between the use of digital tools for company law operations and a reduction in fraudulent and illegal activities, there are a number of challenges that prohibit any conclusive assessments of causality. For instance, such positive assessments rely primarily on the logic that the use of digital tools facilitates and leads to increased interconnection between national authority databases – and that those national authorities use those databases in the correct way to be able to achieve the reductions in fraudulent / illegal activities. Data detailing the levels of fraudulent / illegal activities related to the four company law operations under examination is either not available or reveals no trends. Complemented by the challenges with the accuracy of crime data, this means that it is only possible to postulate on the level of influence digital tools currently have in this respect. Finally, there is also an issue of proximity in terms of connecting the use of digital tools to reductions in fraudulent / illegal activities, as many other factors, including changes to the focus of law enforcement activities and the efficiency of the justice system, have exerted a stronger and more direct influence on the level of fraudulent / illegal activities than the use of digital tools.
7. Existing EU and national measures to promote the positive impacts and to address the adverse impacts of the use of digital tools in company operations

What you will find in this chapter:

Chapter 7 presents a list of existing measures to promote the positive impacts of the use of digital tools in company operations and to address their adverse impacts.

This chapter presents an initial list of existing measures to promote the positive impacts of the use of digital tools in company operations and to address their adverse impacts. A number of schemes have been identified, principally in Estonia, Germany, the Netherlands, Portugal and the UK. These are presented here according to the type of impact they seek to address or promote.

Safeguards and avoiding fraud

One of the main issues faced by UK companies in terms of fraud was company hijacking whereby criminals would submit false information about the directors or secretaries of a company in order to take control of it, make fraudulent applications for corporate credit / debit cards and fraudulently spend, order goods or acquire business in the company name. When done in paper form, Companies House simply accepts changes made by paper filings without verifying the validity of the submission. Furthermore, directors and company secretaries did not receive automatic notifications upon changes to the company’s registered details.

When moving to the digitalisation of the filing and disclosure of company information, Companies House, the UK registrar of companies, started using WebFiling with the PROOF system. WebFiling is a 24/7 direct, end-to-end digital tool for the filing and disclosure of certain company information and for elements of the dissolution process. The PROOF system is part of WebFiling and once a company is signed up to PROOF, Companies House will no longer accept paper submissions of forms that seek to register a company’s annual return or register changes to a company’s registered office address or a company’s officers. Instead, this information needs to be submitted online through WebFiling, which uses a variety of security measures to ensure the validity of submissions, including passwords and authentication codes. As such, the system is considered more secure than using paper / hard copy filings and circumvents the issue of company hijack, given the added security and certification in accessing the system.

Safeguards for foreign owners of companies

In Estonia, the government is promoting a significant e-residency project, where foreigners who wish to establish a company in Estonia can apply for the e-residency card allowing them access to all e-services available in Estonia. Since 2013, the Estonian government has supported a range of measures to implement e-residency, increase the availability of Estonia’s digital services to such e-residents and to remove obstacles that were, for example, preventing e-residents from opening bank accounts or selling shares in a company without having to meet Estonian bank officials or notaries in person. The most recent step in this process was recently enacted by the Ministry of Justice, which introduced an amendment to the Commercial Code, another marked step along the continual development of so-called ‘e-Estonia’\(^{124}\) (adopted by Parliament on 20 April 2017). This amendment allows the location of a company’s management board to be in a foreign country. Once the amendment enters into force foreigners will able to be located in a foreign country but still run their company located in Estonia.

The developments in Estonia’s e-residency project are linked to the country’s developed e-government system, which takes extensive steps to implement the necessary safeguards to ensure that the privacy and security of the data is ensured. This drive to digitalise citizen or business interactions with the Estonian state was established immediately upon its independence from the Soviet Union. An ambitious digital infrastructure project began in 1991, which has evolved over many years, with the objective of ensuring and driving Estonia’s economic and social development. As such, the developments in e-residency and the policies implemented to ensure foreign owners of

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companies trading in Estonia can access all relevant governmental services, as described above, is born primarily out of a drive to facilitate business activity for foreigners in Estonia\textsuperscript{125}, as well as expand Estonia’s international recognition in digital affairs and ensure accessibility of services for Estonia’s diaspora.

**Linking of information between datasets**

In **Portugal**, the Portuguese Public Contracts Code (PCC) governs the mandatory procedures for the formation of public contracts and lays down the rules for their performance. It offers a public procurement portal – the BASE Portal; dedicated to all public contracts under PPC, which gathers all relevant information on public procurement.

One of the most innovative changes brought to this scheme in 2008 includes the possibility of using fully electronic procedures in contract foundation, which became mandatory in all tender procedures. When establishing this obligation, the Portuguese Government also decided that this task should not be performed by a single platform, thus paving the way for the emergence of a private market of electronic platforms. That decision led to the creation of the BASE as a single portal that collects all information on public procurement and publishes it in an open and transparent way, thus becoming an instrument of accountability and transparency in public purchasing. This information can easily be cross-checked with the information submitted digitally by companies. This example demonstrates how the electronic availability of company information can be cross-referenced and linked to other databases in order to facilitate the exchange of information as well as increase transparency.

In **Italy**, the ComUnica one-stop shop for company operations can also be considered to be good practice. It has given the possibility to all interested parties to communicate with different administrations at the same time, by filing documents only once and online with great time-saving benefits for companies and the national authorities – the main objective of the system. The ComUnica filing allows for a single registration procedure of a company with the business registry, tax and VAT authorities, and social security authorities,\textsuperscript{126} as well as notifying the start of trading to the municipal one-stop shop for businesses. From the authorities’ point of view, the system allows for the easier identification of fraud and other illegal activities.

**Digitalised information flow between notaries and business registers**

In **Germany**, despite the lack of availability of direct and end-to-end digital tools, the obligatory intervention of the notary guarantees legal certainty and prevents fraudulent and illegal activities in the context of the four company law operations. The obligation of notaries to submit the company information to the register by electronic means increases the efficiency and lowers the time span for setting up company operations. In this context, the EGVP-system plays a key role\textsuperscript{127}. Firstly, because it allows for information flow to the commercial register to take place by electronic means, thus increasing speed and efficiency. Secondly, the technical architecture of the EGVP-software allows data to be transferred in a structured format, thus providing registry courts with the possibility to extract specific data from the transferred data (e.g. the notarial deed in PDF or XML) in a manner that can be organised and filed efficiently.

The EGVP-system also ensures that data transfer is executed in a secure way: (i) the EGVP-software is only open to designated persons\textsuperscript{128}; (ii) the EGVP-software makes use of end-to-end encryption, which ensures the confidentiality of the transferred data; (iii) further file encryption ensures that information that is transferred between the notary and the commercial register cannot be changed. These security and reliability aspects in the context of data transfer are further emphasised by the fact that, since the introduction of the EGVP-system in 2007, there have been no reports of misuse\textsuperscript{129}.

The description of digitalised information flow between notaries and business registers above also applies to the **Netherlands**, where notary intervention is required in the context of using digital tools for company law operations. In the Netherlands, information flow between the notaries and the KvK is digitalised and makes use of digital tools and frameworks that guarantee speed, efficiency, security and reliability of data transfer, e.g. Standard Business Reporting (SBR) framework\textsuperscript{130}.

\textsuperscript{125} Ibid. p.10.
\textsuperscript{126} See further <https://www.registroimprese.it/comunica#tab=cosa&under-tab=corsi>
\textsuperscript{127} Sources: German Notaries Chamber, and Federation of German Industries (BDI).
\textsuperscript{128} For the purpose of introducing data directly in the commercial register, the EGVP-system is only open for notaries.
\textsuperscript{129} Sources: German Notaries Chamber and German Ministry of Justice.
\textsuperscript{130} Sources: KvK, and Dutch Notary Chamber.
8. Conclusion

The aim of this study was to thoroughly assess the impact of the use of digital tools in company operations on different target areas (socio-economic, legal certainty and fraudulent / illegal activities).

A complex methodology was developed to:

- Collect the relevant information on (i) the availability and use of digital tools, and (ii) observed impacts in the three target areas in order to assess whether a correlation was observed; and
- Where a correlation was observed between the use of digital tools and impacts in the three target areas, assess whether a causal link could be established between one and the other.

The following conclusions have been reached:

8.1 Availability and use of digital tools

- The regulatory landscape with regard to the use of digital tools in the four company law operations across the 14 Member States is diverse. Digital tools for company registration and dissolution, filing and sharing of company information, and mergers are made available (or not) through a variety of legal and practical vehicles; and
- While several Member States (e.g. PT, EE, DK, UK) make direct, end-to-end digital tools available for company registration and filing and disclosure of company information, only Denmark allows for this typology of digital tool to be used in the context of company disclosure and merger operations. Additionally, the majority of Member States in the geographical scope of this study make digital tools available in the context of the four company law operations through the action of intermediaries, e.g. notaries and specialised company law agencies.

8.2 Impacts identified in the target areas

**Socio-economic impact target area**

The potential impact most commonly reported by stakeholders – a collective which includes representatives of national authorities, business interest groups, trade union confederations, lawyers and notaries – concerns the positive effect of the use of digital tools on the efficiency with which the four company law operations can be conducted. Stakeholders across all eight other Member States where impacts were perceived and digital tools are in use (Belgium, Bulgaria, Germany, Estonia, Hungary, Italy, Netherlands and Portugal) stated that a key impact for which to examine the existence of a causal relationship was between the use of digital tools and increased efficiency of the company law operations.

Beyond the perceived impacts on the efficiency of the examined company law operations, trends have been identified in relation to the highlighted indicators in the following cases:

- **Number of economically inactive companies:** increases identified in Estonia\(^{131}\), Hungary\(^{132}\) and the United Kingdom\(^{133}\);
- **Number of cross-border merger activity:** increases identified in Belgium, France, Germany, Italy, Luxembourg, the Netherlands and the UK\(^{134}\);
- **Number of cross-border merger activity:** increases identified in Belgium, France, Germany, Italy, Luxembourg, the Netherlands and the UK\(^{135}\);

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\(^{131}\) Data provided by the Estonian Business Register.

\(^{132}\) KSH (Hungarian Central Statistical Office).

\(^{133}\) Company Register Activities in the United Kingdom 2015-16, Table E2; and Company Register Activities in the United Kingdom 2014-15, Table F2.

\(^{134}\) Lexiddale & Bech-Bruun (2013). *Study on the application of the cross-border mergers directive*.

\(^{135}\) Lexiddale & Bech-Bruun (2013). *Study on the application of the cross-border mergers directive*.
• **Changes to the population of enterprises, including:**
  o **Number of enterprises / registered companies:** increases noted in Bulgaria and the Netherlands;
  o **Number of enterprise births and / or birth rates:** increases noted in Poland and the UK; and
  o **Number of enterprise deaths and / or death rates:** increases noted in Bulgaria, Hungary, Italy and Poland.

• **Perceptions on the increased accessibility and transparency of business information:** noted in Bulgaria and Hungary.

Important additional indicators collected include the following:

• **Average labour costs** per Member State: notable here are the low labour costs in Bulgaria, Hungary and Romania; and

• **Corporate tax rates** per Member State: notable here are the low corporate tax rates in Bulgaria, Hungary, Romania and Estonia (in relation to undistributed profit).

**Legal certainty impact target area**

Contrary to the hypotheses detailed in section 4.3, the majority of stakeholders consider the impacts of the use of digital tools for company law operations on legal certainty to be positive. Similarly to the socio-economic impact target area, it is considered that the use of digital tools positively impacts (i.e. increases) the accessibility and transparency of business information, which leads to **improved legal certainty** across all stakeholder groups. This is noted in particular in Estonia, Hungary, Poland and Portugal.

**Fraudulent / illegal activities impact target area**

Although more quantitative data are available for the fraudulent / illegal activities impact target area than for legal certainty, the publicly available data are still significantly restricted. As such, the majority of the potential impacts presented here relate to the perceptions of the key stakeholder consulted; namely, representatives of national authorities, business interest groups, trade union confederations, lawyers and notaries.

In a similar fashion to the potential impacts detailed for legal certainty, those collected for the fraudulent / illegal activities impact target area, for the most part, contradict the originally devised impact hypothesis. The hypothesis considered that the use of digital tools would lead to an increase of fraudulent / illegal activities. In fact, the majority of stakeholders consulted across the 14 Member States consider that the **use of digital tools across the four company law operations reduces the incidence of fraudulent / illegal activities related to those company law operations**. Such sentiments were reported in Germany, Hungary, Italy, the Netherlands, Poland, Portugal and the United Kingdom.

### 8.3 Causal link between the use of digital tools and observed impacts

Regarding the 31 potential causal links assessed, causality has been established between the use of digital tools for company law operations and identified impacts in 10 instances covering all nine Member States. In a further 18 instances, the use of digital tools has been considered as contributing, to some extent, to the impact, although no causality can be established. In these cases, the extent to which the use of digital tools contributed to the identified impact is clearly discussed. Considering the instances where causality has been established, it is notable that these exclusively relate to the **positive impact of the use of digital tools on the efficiency of conducting the four company law operations**.

For the **legal certainty impact target area**, causality has not been established for any of the four potential causal links examined (across Hungary, Estonia, Poland and Portugal). In fact, across all four instances, the use of digital tools has been found to be a contributing, but not causal, factor in relation to positive impacts on legal certainty. This finding is in contrast to the overarching hypothesis, documented in section 4.3, related to this impact target area.

Based on the evidence provided across the 14 Member States examined, and the Member State-level causality assessments analysed above, the initial hypothesis related to the impacts of the use of digital tools on legal certainty has been rejected. No evidence has been collected suggesting that the use of digital tools for company law operations could have a negative impact on legal certainty;
in fact, all stakeholders perceive the impacts of using digital tools for company law operations on legal certainty to be positive. However, this relationship is also not determined to be causal.

For the fraudulent / illegal activities target area, causality has not been established for any of the three potential causal links examined (covering Italy, Portugal and the United Kingdom). For two of the three cases, the use of digital tools is considered to play a moderate contributory role, but not a causal role. In these instances, the strength of the evidence and the influence of other factors lead to this assessment.

Based on the evidence provided across the 14 Member States examined, and the Member State-level causality assessments analysed above, the initial hypothesis related to the impacts of the use of digital tools on fraudulent / illegal activities has been rejected. In fact, in a similar fashion to the conclusions on legal certainty, it is, in fact, considered by the vast majority of stakeholders that the use of digital tools for company law operations will lead to a reduction in fraudulent / illegal activities. However, this positive relationship is not determined to be causal.
9. Appendices

9.1 Appendix I: List of interviewees, including national level (conducted / contacted)

<table>
<thead>
<tr>
<th>Member State</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>International Council of Belgian Notaries</td>
</tr>
<tr>
<td></td>
<td>Register of the court of commerce of Brussels</td>
</tr>
<tr>
<td></td>
<td>Minister of Economy – Banque-Carrefour des Enterprises, online company database</td>
</tr>
<tr>
<td></td>
<td>Federation of Enterprises in Belgium – FEB</td>
</tr>
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<td>Attorney-at-law and partner in law office ALTERNA / Member of the Corporate and Business Law Committee of the Estonian Bar Association</td>
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Appendix II: Initial issue paper

This issue paper was sent to EU level stakeholders to initiate a discussion on the hypothesis and the impact of the use of digital tools in the three target areas.

This document provides an overview of the key issues to be covered during the familiarisation interview the study team conducted with key stakeholders (i.e. European Trade Union Confederation, European Trade Union Institute, European Business Register and BusinessEurope) with regard to the project currently being carried out for DG JUST – Study on the impact of digital tools in company law operations. The main objective of the study is to identify and assess the impacts of using digital tools in four company law operations (i.e. company registration, filing and disclosure of company information, company dissolution, and mergers) on three impact target areas: socio-economic, legal certainty, and illegal / fraudulent activities.

9.2.1 Analytical approach

The study is broken down into three main overarching tasks, summarised below:

- **Overarching Task 1** – identify, quantify and assess the relevant (positive and adverse) impacts of the use of digital tools in company operations on the target areas;
- **Overarching Task 2** – present an overview of existing EU and national measures taken by national competent authorities to promote positive impacts and to address the adverse impacts of the use of digital tools in company operation, if any, on the target areas; and
- **Overarching Task 3** – provide propositions to address the adverse impacts of the use of digital tools in company operations, and assess the legal possibility of their introduction at EU level.

The general objective and scope of this interview is to discuss elements that are relevant for **Overarching Task 1**. Specifically, the research questions (RQ) posed by the study team in the context of **Overarching Task 1** are as follows:

- **RQ1.** For each company operation, to what extent are digital tools available at the national and cross-border levels?
  - For each company operation, to what extent does the EU regulatory framework provide for the use of digital tools (both nationally and cross-border)?
  - For each company operation, to what extent are digital tools available in each Member State (both nationally and cross-border)? How are digital tools made available (e.g. through law, practical guidance, other)?

- **RQ2.** For each target area, what positive or adverse impacts exist at the national and cross-border levels?
  - What **positive / adverse impacts** exist with regard to the use of digital tools for each company operation (both nationally and cross-border)? How do they impact one or more of the target areas?

- **RQ3.** For each company operation, to what extent are digital tools in use at the national and cross-border levels?
  - For each company operation, to what extent are digital tools in use across the 14 Member States selected for in-depth exploration (both nationally and cross-border)?

- **RQ4.** To what extent are the three target areas **positively impacted** by the use of digital tools for each company operation at the national and cross-border levels?
  - For each target area, what is the magnitude of the **positive impacts** identified in RQ2 in the 14 Member States (for both national and cross-border use of digital tools)?
  - To what extent does the magnitude of the identified **positive impacts** differ for national and cross-border company operations?

- **RQ5.** To what extent are the three target areas **adversely impacted** by the use of digital tools for each company operation at the national and cross-border levels?
  - For each target area, what is the magnitude of the **adverse impacts** identified in RQ2 in the 14 Member States (for both national and cross-border use of digital tools)?
➢ To what extent does the magnitude of the identified adverse impacts differ for national and cross-border company operations?

- RQ6. For each target area, to what extent is there a causal relationship between the use of digital tools for each company operation and the positive / adverse impacts?
  ➢ To what extent are the identified positive impacts related to the use of digital tools for each company operation in the 14 Member States (for both national and cross-border use of digital tools)?
  ➢ To what extent do causal relationships, if they exist, differ between national and cross-border company operations?
  ➢ To what extent are the identified adverse impacts related to the use of digital tools for each company operation in the 14 Member States (for both national and cross-border use of digital tools)?
  ➢ To what extent do causal relationships, if they exist, differ between national and cross-border company operations?

- RQ7. To what extent does the use of digital tools for each company operation impact each target area? How does the impact differ based on the different analytical parameters?
  ➢ To what extent does the impact differ by target area?
  ➢ To what extent does the impact on each target area differ across the four company operations?
  ➢ To what extent does the impact on each target area differ between the national and cross-border use of digital tools?

- RQ8. What are the impacts of potential new measures at EU level?
  ➢ What new measures could be introduced at EU level?
  ➢ What would the impacts of these new measures be in each of the target areas? Namely:
    - Socio-economic – in terms of employment, special conditions, impact on some regulated professions etc.;
    - Legal certainty – in terms of both (i) the technical elements to ensure security and authentication of natural persons representing legal persons, and (ii) the reliability of digital documents;
    - Fraudulent / illegal activities – such a tax evasion, fraud (including VAT and carousel fraud); and
    - How would those impacts differ from those identified as part of the other research questions?

9.2.2 Definitions and hypotheses of impact indicators for each target area

The indicators listed below have been selected by the study team for a preliminary analysis of the impact of using digital tools in company law operations on the three target areas. Please provide feedback on the relevance of each indicator, and whether or not you agree with the proposed hypothesis of the impact of using digital tools in company law operations on the corresponding target area:

- Target area 1 – Socio-economic impacts
  ➢ Impact 1: change in the number of self-employed persons over the last five years in relation to the existence of end-to-end company registration in that Member State;
    - Selected indicators: available data on the distribution of the type of European employment based on available statistics (Eurostat), and the Self-Employment in Europe report produced by the Institute for Public Policy Research, in partnership with J.P. Morgan Chase.
• **Hypothesis on the impact of digital tools:** where digital tools are available and the cost of setting up a business is cheaper; the rate of self-employment will increase as the prospect of setting up a business becomes a more realistic one.

➢ **Impact 2: the number of inactive limited liability companies not performing any economic activity** in a given Member State in relation to the total number of limited liability companies in that Member State and the prevalence of digital end-to-end registration.
  • **Selected indicators:** information from national business registries and tax authorities on the number of registered businesses reported to be economically inactive.
  • **Hypothesis on the impact of digital tools:** the proportion of limited liability companies not performing any economic activity will increase as it becomes faster and cheaper to establish companies, in some instances with no initial capital requirements and no real incentive to dissolve them.

➢ **Impact 3: a link between the number of cross-border mergers in relation to the use of digital tools in cross-border company operations** over the last five years.
  • **Selected indicators:** the volumes of cross-border merger activity over the last five years and the availability of the digital tools in the regions of highest and lowest activity. Information available in *Study on the Application of the Cross-Border Mergers Directive* (Bech-Bruun and Lexidale).
  • **Hypothesis on the impact of digital tools:** the efficiency of cross-border merger operations will have increased in line with the increased use of digital tools in company operations (e.g. thanks to a more efficient and reliable exchange of information about the cross-border mergers between business registers).

➢ **Impact 4: level of employment:** be that either full or part-time work.
  • **Selected indicators:** measured using the EU’s employment statistics (Eurostat), which cover employment rates by Member State, as well as the ratio of part-time and fixed-term contracts, and job vacancy statistics.
  • **Hypothesis on the impact of digital tools:** as the use of digital tools increases so, too, does the percentage of the Member State in employment as a result of the ease of which business can be established and run and the prospects that digital tools offer for opening new avenues of profitability to those businesses, inducing growth and new employment prospects.

➢ **Impact 5: working conditions** – relating to working time (e.g. hours of work, rest periods, work schedules), remuneration, physical conditions and mental demands. As such, the ILO Working Conditions Laws Database covers laws on working time, minimum wages and maternity protection.
  • **Selected indicators:** relevant indicators include those collected through the European Working Conditions Survey and those published in the 2015 report *Recent developments in the distribution of wages in Europe* (Eurofound). Also ILOSTAT has relevant data on working time and earnings.
  • **Hypothesis on the impact of digital tools:** the use of digital tools will lead to the movement of companies to Member States with varying rules on working conditions (for the employee). This could be related to three of the selected company law operations: registration, dissolution and mergers.

➢ **Impact 6: Social protection** – relating to access to health care and income security, particularly for vulnerable groups. The ILO maintains International Labour Standards on Social Security.
  • **Selected indicators:** the ILO has a suite of indicators on social protection covering health expenditure, health protection deficits, social protection coverage, public social protection expenditure, social security and pensions. The OECD also has data on social spending by public administrations.
Assessment of the impacts of using digital tools in the context of cross-border company operations – Final Report

- **Hypothesis on the impact of digital tools**: the use of digital tools will lead to the movement of companies to Member States with varying rules on social protection (for the employee).

- **Impact 7: income inequality** – relating to the extent to which income is distributed in an uneven manner among a population.
  - **Selected indicators**: the key indicator is the Gini-coefficient of inequality, developed by the OECD. As such, it covers all OECD countries but not all EU Member States (BG, HR, CY, LT, MT and RO are not OECD members). Additional OECD indicators of inequality are poverty gap and poverty rate.
  - **Hypothesis on the impact of digital tools**: the use of digital tools will lead to individuals establishing entities in areas where the labour force is naturally suited to their business operations; this will entrench or worsen income inequality across, member states, but not, necessarily, within them as areas where the labour force is most skilled will continue to attract those employers offering the most substantial remuneration.

- **Impact 8: industry and labour market polarisation** – relating to the potential polarisation of particular occupations / industries in specific EU Member States or clusters of Member States.
  - **Selected indicators**: a relevant proxy is employment by industry and occupation across Europe.
  - **Hypothesis on the impact of digital tools**: the use of digital tools will lead to the movement of companies to Member States that are considered to be ‘strong’ in their particular operational area in terms of the suitability of the legal framework, customer base and labour market.

- **Impact 9: potential loss of public revenue** – relating to the opportunity costs to a Member State that would have received corporate tax from a company that has, instead, registered in another Member State.
  - **Selected indicators**: key data includes revenue from corporate taxation. Additional relevant proxies include the number of companies, their revenues and profits (e.g. capital gains), average employment level of companies etc.
  - **Hypothesis on the impact of digital tools**: the use of digital tools will lead to the movement of companies to Member States that are considered to have varying tax laws.

- **Impact 10: posting of workers** – relating to the instance where employers send their employees to conduct their work in a different Member State to the one where they normally operate. In the instance where this takes place, employers must meet the minimum requirements of worker’s rights in whichever Member State they are sent to.
  - **Selected indicators**: a relevant proxy is employment by industry and occupation by country.
  - **Hypothesis on the impact of digital tools**: the use of digital tools will support the posting of workers, but only insofar as the use of them facilitates the easy filing and disclosure of company information.

- **Impact 11: employee board representation and the right to information** – relating to the establishment of special negotiating bodies to represent employees and the formation of channels to inform and consult employees, enabling them to raise issues and discuss problems.
  - **Selected indicators**: perception of stakeholders.
  - **Hypothesis on the impact of digital tools**: the use of digital tools will improve the numbers of employees who have access to these negotiating bodies and useful channels of communication with their employers.
• **Target area 2 – Legal certainty**

➢ In our understanding, this target area concerns any issues which might undermine the perception that company law operations, when carried out through less traditional, digital mediums are as legally valid and likely to be authentic, or at least, as easy to ratify as when they had been done using paper. The areas of analysis in this domain will focus on issues surrounding the security and authenticity of legal documents, and how to ensure that in the instance where a document is not submitted in person, that it can be ensured that it was submitted by the individual who claimed to submit it, and that they had the authority to act on behalf of the company they claimed to represent;  
➢ Given the nature of the **legal certainty target area**, the data to be collected in order to assess the impacts will be qualitative. The panel of experts will provide judgment on these areas.  
➢ **Key stakeholders to be consulted include:** lawyers and notaries, as well as business registries, and EU level stakeholders such as BusinessEurope, European Business Register, ETUC and ETUI.

• **Target area 3 – Fraudulent / illegal activities**

➢ **Impact 1:** the number of illegal activities (listed below) over the last five years in relation to the increase in the use of digital company registration and filing of company information compared to the situation regarding the same crimes conducted using analogue systems in the same Member State.  
  • **Tax evasion** is the deliberate and illegal non-payment or underpayment of tax; it can relate to any form of tax, which is a legally mandated requirement to the state for earning economic profit:  
    o VAT  
    o Social security contribution  
    o Corporation tax  
  • **Financial crime** a financial crime is one that includes any offence involving fraud, dishonesty or misconduct or misuse of information relating to pecuniary accumulation. Money laundering involves hiding the origin of illegally acquired money, this usually involves different bank accounts or shell (fake) companies. The act of defrauding an investor involves providing a prospective investor with incorrect information, which they will use to base their decision of investment on. Illegitimate investment service vehicles are a more specific instance of defrauding investors:  
    o Money laundering  
    o Defrauding investors  
    o Illegitimate investment vehicles (Ponzi and Pyramid schemes etc.)  
  • **The number of fraudulent / illegal activities**  
    o Credit card fraud  
    o Other false accounts  

➢ **Selected indicators:** perception of stakeholders, proxies include the size of the shadow economy and the relative portion of the economy transacted through cash-based payments.  
➢ **Hypothesis on the impact of digital tools:** increasing use of digital tools leads to greater levels of identity fraud and other fraudulent / illegal activities as the need for documents and legal persons to be physically identified decreases.

9.2.3 Evidence for hypotheses linking indicators to impacts on the target areas

Please provide further references to reports, studies, communications and any other type of knowledge resource to support your feedback. This will be extremely helpful for the study team as it will (i) inform the first stage of data collection, and (ii) validate or disprove the preliminary hypothesis mentioned above.
9.3 Appendix III: Case studies

The case studies presented in this chapter provide practical examples of the use of digital tools and its potential impacts on each of the three target areas in cross-border situations. Each of the three cases relates to one of the three target areas, as detailed below:

- **Case study 1** examines the potential socio-economic impacts related to the cross-border use of digital tools for company registration in Denmark, Germany and Poland.
- **Case study 2** examines the potential legal certainty impacts related to the cross-border use of digital tools for company registration in Denmark and Germany.
- **Case study 3** examines the potential impacts on fraudulent / illegal activity related to the cross-border use of digital tools for company registration in Estonia, Portugal and Belgium.

In the introduction to each case study, a hypothesis on the potential impacts of using digital tools is presented, alongside the formulation of these hypotheses as relevant **but-for** tests, as per the methodology described in chapter 6. Following this, the national-level processes for the relevant company law operations are detailed; the potential impacts considered for the specific case are presented; the perceptions of stakeholders on the relationship between the use of digital tools and the potential impacts are provided; the stakeholders that contributed are listed; and the results of the causality assessment for each case is detailed.

9.3.1 Case study 1: Socio-economic impact target area

*The socio-economic impacts of using digital tools for the registration of limited liability companies: a case study of Danish and German companies registering and operating in Poland*

**Introduction**

This case study aims to provide a well-rounded understanding of the potential socio-economic impacts of using digital tools for the cross-border registration of companies in the EU, by examining a specific case. More specifically, it will provide an overview of the relevant socio-economic impacts of using digital tools for company registration through a comprehensive examination of the interactions between cross-border company registration and social standards in three selected Member States. Corporate taxation environments will also be considered. These Member States have been selected as they represent different combinations of use of digital tools (regarding company registration) and perceived social standards:

- **Denmark** has high availability and use of digital tools for company registration and high perceived social standards (as per Eurofound’s *Sixth European Working Conditions Survey* – EWCS, 2015);
- **Germany** has limited use of digital tools for company registration and high perceived social standards (as per EWCS, 2015); and
- **Poland** has high availability and use of digital tools for company registration but low perceived social standards (as per EWCS, 2015).

This introductory section of the case study comprises a general overview of the working hypotheses concerning the socio-economic impacts of using digital tools for company registration in the cases of Denmark / Germany and Poland, as well as its underlying rationale and assumptions. In this instance, the working hypotheses are as follows:

**Hypothesis 1**: The availability of digital tools for cross-border direct online company registration leads to a situation where companies / individuals, based in a Member State with higher social standards, digitally register their company in Member States with lower social standards and / or more favourable corporate taxation environments, i.e. the potential displacement of companies from Denmark and Germany to Poland (or the establishment of separate legal entities in Poland) due to the availability of digital tools for company registration (in PL) in order for those companies to benefit

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136 In this respect, the term ‘social standards’ encompasses employment and business standards, such as working conditions and rights at work.
from the lower social standards, e.g. reduced wages / increased working hours, and / or more favourable corporate taxation environments; and

**Hypothesis 2:** The displacement of companies described in hypothesis 1 is less likely to occur if the country of origin (i.e. Denmark or Germany) also has digital tools available for company registration.

As such, the main specific objective of the case study is to establish or deny a causal link between the use of digital tools for company registration and the exploitation of lower social standards and / or more favourable corporate taxation environments.

To achieve this objective, the study team conducted a data collection and analysis exercise, which yielded three fundamental sets of data:

- Categorisation of the processes required for registering a company in Denmark, Germany and Poland, with a specific focus on the availability of digitalised processes;
- Data on the socio-economic impact indicators for Denmark, Germany and Poland, including those extracted from ECWS 2015 and those more generally referred to in section 4.2 of this report; and
- Characterisation of the company registration relationships between Denmark, Germany and Poland, i.e. the extent to which Danish / German / Polish companies register in each of the other two countries.

This data collection and analysis exercise was further complemented with input from relevant stakeholders, including the Danish Embassy in Poland, the Scandinavian-Polish Chamber of Commerce and the Polish-German Chamber of Commerce. By taking the results from this data collection and analysis exercise into consideration, the panel of experts was then invited to consider three *but-for tests* in order to confirm or reject the existence of a causal link. Based on the hypotheses derived above, the working *but-for tests* are as follows:

**But for** the use of direct online company registration, *would the difference between the number of Danish / German companies operating in Poland and the number of Polish companies operating in Denmark / Germany have occurred?*

**But for** the difference between the number of Danish / German companies operating in Poland and the number of Polish companies operating in Denmark / Germany, *is there any other cause other than the use of direct online company registration that would lead it to occur?*

Beyond the primary *but-for tests*, above, a further facilitative test has been developed in order to ensure that the social standards and tax environments are not the primary causal factor:

**But for** the social standards and tax environments, *would the difference between the number of Danish / German companies operating in Poland and the number of Polish companies operating in Denmark / Germany have occurred?*

Firstly, this case study presents background information before highlighting the evidence utilised in the development of the hypotheses and *but-for tests*, including both the availability and use of digital tools and the relevant impact indicators. Secondly, the final objective of characterising the causal relationship, or lack thereof, between the use of digital tools for company registration and the listed socio-economic impacts is achieved.

**Recapitulation of the availability of digital tools for company registration operations in Germany, Denmark and Poland**

In Germany, digital tools are available for the registration of companies, although the process is not end-to-end. A notary must make use of the EGVP (*Elektronisches Gerichts- und Verwaltungspostfach*), i.e. a special electronic communication platform for court communication. The system makes use of the OSCI 1.2. Internet protocol and is protected by a two-step authentication system. Given that the organisation of the courts is a competence of the Länder, the justice ministries of the different Länder are mandated to set up an electronic system for company registration (i.e. through §8a Abs 2 HGB: each Land issued executive regulation to make the use of EGVP mandatory for company registration. Companies are then registered in the commercial register (i.e. *Handelsregister*), which is kept by the registration courts; according to §8 Abs. 1 HGB (i.e. *Handelsgesetzbuch – Commercial Code*). The entries in the register are kept electronically.
In order to initiate the registration process, companies first have to make an application for registration in the commercial register. The registration court decides if all formal requirements are fulfilled and if all necessary information is complete. On successful completion of this stage, the court proceeds to include the company in the commercial register (§25 HRV). Registration is obligatory for limited liability companies (i.e. AG, GmbH), which have legal personality. Under §12 HGB, each application for company registration must take place by means of an electronic notarial official certified deed. In practice, this official certified deed is the registration application protocol, which must be drafted by a notary and signed by the company director(s).

The registration application protocol for limited liability companies must be accompanied by official certified copies of the following documents:

- Company contract (i.e. which also has the form of a notarial official certified deed);
- A list of directors (i.e. for Gmbh) and board members (i.e. AG); and
- A declaration that the directors and / or board members are not prohibited to exercise a profession in the sector of operation and that they have not been convicted of insolvency or economic crimes.

These accompanying documents are electronically transferred to the register court, i.e. as governed by §39a Beurkundungsgesetz, which require that document copies bear the electronic signature of the notary. The court then proceeds to publicise the entry in the commercial register, by electronic means (§10 HGB and § 27 HRV), on successful completion of the registration process.

In Denmark, companies can be set up using direct, end-to-end digital tools through the www.virk.dk website. The rules governing foreign businesses differ depending on whether the foreign business is temporary or permanent. Every step of the process can be done using www.virk.dk regardless of the national or foreign nature of the company being registered, as long as individuals seeking to register a company are in possession of a NemID electronic signature. The NemID digital signature protocol is based on Public Key Infrastructure (PKI) technology, which implies that the user is issued a digital signature consisting of a private key and a public key certificate. Individuals seeking to register a company in Denmark can also print the online application, used for the registration process and send it to the Danish Business Authority by post.

An important recent amendment regarding company registration is "the executive act on registration and disclosure of information regarding owners in the Danish Business Authority". This change came into force in July 2017. This executive act requires that real owners are visible in the business register (CVR), with the only exemptions being listed companies and sole proprietors. Prior to this, only legal owners had to be disclosed in the register. The rules regarding real owners are an implementation of the Fourth Anti Money Laundering Directive (AML). The company registration process in Denmark can be summarised as follows:

- For certain temporary services in Denmark, individuals must notify the Register of Foreign Service Providers (RUT) by providing specific company documentation.

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137 §7 GmbHG; §36 AktG.
139 § 8 GmbHG; § 37 AktG.
140 https://danishbusinessauthority.dk/what-are-rules.
141 https://danishbusinessauthority.dk/where-register.
142 https://www.nemid.nu/dk-da/
143 See https://www.nemid.nu/dk-da/om-nemid/sikkerheden_bag_nemid/teknikken_bag_nemid/
144 PKI is a common digital protocol used to establish end-to-end encryption of numerous digital applications and online environments. As an example, the structural HTTPS web protocol is based on PKI encryption.
145 The original legislative framework to regulate the use of digital signature protocols (i.e. the Danish Act on Electronic Signatures and Related Notices) was effectively repealed on the 1 July 2016, and further overhauled by the Electronic Identification and Confidentiality Regulation for Electronic Transactions in the Internal Market (eIDAS) Regulation.
146 For additional information, see https://danishbusinessauthority.dk/business-registration
147 Executive Act Nr. 557 1 June 2016.
148 Since 2014, legal owners have had to register in The Public Register of Owners (Det Offentlige Ejerregister).
150 https://danishbusinessauthority.dk/register-foreign-service-providers-rut-0.
• An application form must be accessed online for the registration of a foreign company in Denmark\textsuperscript{151};

• Registering a Danish company requires a Danish social security number (CPR), and a Danish NemID. The application form for limited liability companies is provided in Danish\textsuperscript{152}; and

• As a general rule, individuals looking to register a company in Denmark can submit any formal document in Danish and English. However, foreign companies should note that some application forms are solely in Danish.

In Poland, individuals looking to register a limited liability company in the CEIDG register as an individual company or the National Court Register (KRS) as a company in a form regulated by the Commercial Code, can do so by filling standardised paper application forms and lodging them in the corresponding office or court. Individuals looking to register a limited liability company in Poland can also do so through the online filing and submission of the necessary documentation, using an electronic signature or the ePUAP trusted profile.

Hence, there are provisions in the Commercial Companies Code that allow for the possibility to register limited liability companies in a \textbf{direct and end-to-end manner}, using the so-called S24 standard contract. An online platform for carrying out company registration operations in Poland using this standard contract is available on the website of the Ministry of Justice\textsuperscript{153} (i.e. eMS system). Specifically, with regard to the registration of limited liability companies in Poland, \textit{non-cash contributions} (e.g. transfer of real estate assets) to the share capital of a company being registered require a notarial deed. To summarise, the process for registering a limited liability company in Poland is as follows:

• \textbf{User registration in the eMS system.} The system is accessible to both Polish nationals and foreigners, however, only the registered user may login to the eMS system, using a pre-defined username and password;

• \textbf{Preparing the necessary data to register a company}, including (i) the registered name of the company, (ii) contact details, (iii) competent registry, (iv) list of shareholders and members of the management board;

• \textbf{Entry of data into the application form in the system}, including electronic filing of the required data and documentation for company registration, as well as the electronic filing of the application for entry in the National Court Register (KRS);

• \textbf{Signing documents by means of an electronic signature}, using a certified electronic signature system such as the ePUAP trusted profile. Documents signed electronically must be downloaded from the system and saved on the computer. Where an application is submitted by the legal representative, the electronic signature of documents is automatically extended to additional statements and documents, which must be signed by the representative;

• \textbf{Payment for application via the eCard system}, including costs for entry in the National Court Register, for the declaration of first entry in the Court and Economic Monitoring Authority, and eCard handling fee; and

• \textbf{Submission of the registration documents at the Registry Court.} Applications for registration of limited liability companies submitted via the eMS system are dealt with by the National Court Register.

As can be seen from the above descriptive analyses, \textit{the digital tools available in Germany are limited by the required engagement of notaries in comparison with the digital tools available in Denmark and Poland.}

\textbf{An overview of the socio-economic impacts considered in this case study}

As detailed in section 4.3, the socio-economic target area – as defined in the wider context of this study – focuses on areas that directly affect the quantity and quality of employment and social standards, with a particular emphasis on employee rights, as ensured by European Law. In addition, this target area looks to examine impacts that influence the commercial environment of the Single Market and the development of each individual Member State’s economy.

\textsuperscript{151} https://indberet.virk.dk/myndigheder/stat/ERST/Registration_of_Non-Danish_Company__Start__-__40112.
\textsuperscript{152} https://indberet.virk.dk/myndigheder/stat/ERST/Start_virksomhed.
\textsuperscript{153} https://ekrs.ms.gov.pl/strona-glowna.
This case study only focuses on potential impacts and indicators related to working conditions, and, therefore, does not cover all the areas of potential socio-economic impacts included in the wider study.

The relevant indicators examined are sourced from the Sixth European Working Conditions Survey, published by Eurofound in 2015\textsuperscript{154}. The objective is to understand the differences in working conditions across the three Member States, to contextualise and confirm or amend the initial hypotheses about working conditions across Denmark, Poland and Germany.

Table 18, below, illustrates that, in relation to a number of indicators of working conditions, the initial hypotheses can be confirmed. The ECWS data presented here detail a situation where, in terms of satisfaction with, and terms of, employment contracts, as well as employee representation, Poland has reduced social standards in comparison with those experienced in Denmark and Germany.

Table 18: ECWS 2015, indicators of relevance.

**Working conditions in Denmark, Germany and Poland: ECWS 2015**

This table presents questions from the 2015 ECWS that are of particular relevance to this case study and the responses for three countries under examination.

**How satisfied are you with working conditions in your main paid job?**

As can be seen below, Polish workers are less likely to be ‘very satisfied’ with their working conditions than those in Denmark and Germany. Furthermore, they are slightly more likely to be ‘not very satisfied’ than workers in Denmark and Germany. In addition, Denmark has the highest ‘very satisfied’ percentage of any Member State.

How satisfied are you with working conditions in your main paid job?

<table>
<thead>
<tr>
<th>EU average</th>
<th>Denmark</th>
<th>Germany</th>
<th>Poland</th>
</tr>
</thead>
<tbody>
<tr>
<td>11%</td>
<td>8%</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td>60%</td>
<td>44%</td>
<td>59%</td>
<td>66%</td>
</tr>
<tr>
<td>26%</td>
<td>47%</td>
<td>30%</td>
<td>21%</td>
</tr>
</tbody>
</table>

**Employment contracts**

As represented below, employees in Poland are more likely to be on fixed term or other or no contract than employees in Germany and Denmark.

Furthermore, employees in Poland are also less likely to receive positive salary changes. Reporting on the last 12 months, only 24% of respondent Polish employees had received a salary increase compared with 44% of German employees and 38% of Danish employees. The EU average was also significantly higher, at 31%.

Employee representation

When asked whether their organisation has a relevant body representing employees, a significantly higher proportion of Polish employees, and a significant majority, said ‘no’ (73%), when compared with German (49%) and Danish (28%) employees, as well as the EU average (50%).

Furthermore, when asked whether their organisation has regular meetings in which employees can express their views about what is happening in the organisation, the same trend is seen. As illustrated below, 64% of Polish respondents said ‘no’ compared with 42% of German employees and only 28% of Danish employees.
**Stakeholder perceptions on the socio-economic impacts of using digital tools for company registration operations**

According to the German Notary Chamber, the digitalisation of company registration operations **does not have direct socio-economic impacts**. The German Notary Chamber also noted that the availability of digital tools does not constitute a particular incentive for businesses to register in a specific country. However, all interviewed stakeholders perceived that the use of digital tools increase the speed and efficiency of company registration operations. In this context, all interviewed stakeholders noted that digitalisation could effectively lower the burden for entrepreneurs and businesses to set up new companies.

The German Notary Chamber has also noted potential adverse impacts in the context of lowering the barriers for carrying out company registration operations: "(...) lower burdens for performing company operations will lead in general to a higher mobility for companies, which also could lead [to a situation in which companies] could move to places where labour and social standards are lower, or to places where the general business conditions are better. This would eventually lead to more income inequality and a greater market polarisation between regions."

All interviewed stakeholders, covering all three Member States, noted that **there are no adverse socio-economic impacts** with regard to the use of direct, end-to-end digital tools in the context of company registration operations. In fact, and in accordance with German stakeholders, interviewed stakeholders in Poland noted a moderate, positive socio-economic impact with regard to the digitalisation of company registration operations: "(...) the encouragement of entrepreneurs to set up new businesses and companies". Moreover, all stakeholders noted that this positive impact is of the same magnitude for companies registered in a digital manner at national and cross-border level.

Several additional points, of key importance to this analysis, were raised by interviewees. Firstly, it was noted that the **Polish digital tools for company registration are only available in Polish**. As such, any company wishing to register in, and move their operations to, Poland, and that does not have a Polish-speaking director, would require assistance in order to register via the system. It was also noted by stakeholders that it is common business practice to engage with local lawyers, or equivalent personnel, when registering in a new Member State to ensure that all obligations are fully understood and that all processes are conducted efficiently and effectively.

Secondly, in a point stressed by all interviewees, the **working conditions of a Member State do not play a significant role in a company’s potential decision to move to that Member State**. More important considerations reportedly include the market suitability of both the origin and destination countries, and the suitability of the workforce in the source and destination countries.

**Stakeholders contacted**

To date, interviews, specifically targeted at the content of this case study, have been conducted with representatives of the following entities:

- Federal Notarial Chamber of Germany and Civil Law Notaries
- German Business Representation – BDI / BDA
- German Federal Ministry of Justice and Consumer Protection
- Association of German Chambers of Industry and Commerce
- Danish Embassy in Poland
- Scandinavian-Polish Chamber of Commerce
- Polish-German Chamber of Industry and Commerce; and
- Crido Legal

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155 See the next section of this case study for a full list of stakeholders contacted.
158 See [http://www.bmiv.de/EN/Home/home_node.html](http://www.bmiv.de/EN/Home/home_node.html) for more information;
159 See [https://www.dihk.de/en](https://www.dihk.de/en) for further information.
160 See [http://polen.um.dk/](http://polen.um.dk/).
Furthermore, the following stakeholders have been contacted without response:

- Foreign Investment Department, Polish Investment and Trade Agency; and
- Peter Nielsen & Partners Law Office;
- Polish Business Registry;
- German Business Registry;
- Danish Central Business Registry;
- Danish Business Authority; and
- German Embassy in Warsaw, Poland.

**Causal link assessment**

The final section of this case study presents the _but-for_ tests developed with regard to the potential socio-economic impacts of using digital tools in the context of company registration operations in Denmark, Germany and Poland. The _but-for_ tests, which are designed to assess causality with regard to such impacts, and the associated assessments are as follows.

**But for** the use of direct online company registration, would the difference between the number of Danish / German companies operating in Poland and the number of Polish companies operating in Denmark / Germany have occurred?

**But for** the difference between the number of Danish / German companies operating in Poland and the number of Polish companies operating in Denmark / Germany, is there any other cause other than the use of direct online company registration that would lead it to occur?

**But for** the recorded differences in social standards, would the difference between the number of Danish / German companies operating in Poland and the number of Polish companies operating in Denmark / Germany have occurred?

**Judgement:** Limited quantitative data are available on the number of Danish / German companies operating in Poland and vice-versa, although qualitative evidence suggests that there are proportionally more Danish / German companies operating in Poland than vice-versa. However, it is highly likely that any such situation is not due to the impact of using digital tools for company registration. As detailed above, the direct, end-to-end online tools available for the registration of businesses in Poland are only available in Polish, meaning that, without the involvement of Polish nationals, no added ease of cross-border registration is provided by these tools. It is also common business practice for companies wishing to register in Poland to engage with local lawyers, or equivalent personnel, to ensure that all obligations are fully understood and that all processes are conducted efficiently and effectively.

Additionally, although the differences in working conditions highlighted above may indicate that Poland is an attractive Member State in which to move operations, the working conditions of a Member State do not play a significant role in a company’s decision to move to that Member State. More important considerations include the market suitability of both the origin and destination countries (for example, in terms of size, geography and the purchasing power of the target population), and the suitability of the workforce in the source and destination countries.

As such, **no causality exists between the availability and use of digital tools and the examined socio-economic impacts related to working conditions.**

### 9.3.2 Case study 2: Legal certainty impact target area

*The legal certainty impacts of using digital tools for the registration of limited liability companies: a case study of Danish and German document authentication processes*

**Introduction**

The main objective of this case study is to provide a well-rounded understanding of the legal certainty impacts of using digital tools for registering companies in the Member States. Specifically, this case study looks to provide an overview of potential impacts on legal certainty in Denmark and Germany. These two countries have been selected because they possess a comparable standard of certainty with regard to company registration operations, yet the processes for doing so are different (i.e. digitally-enabled in Denmark, and in-person, notary, or paper-based in Germany).
The hypothesis of this case study concerning the legal certainty impacts of using digital tools for company registration in the cases of Denmark and Germany is as follows:

**Hypothesis:** The use of digital tools for cross-border direct online company registration leads to a situation where the legal provisions governing the authentication processes of the required documentation carry less legal value in Member States allowing for digital authentication methods.

Specifically, this case study looks to establish or deny a causal link between the use of digital tools for company registration in Denmark and Germany, and potential impacts and challenges on the legal provisions that govern the authentication of the required documentation (e.g. electronic signatures, scanned copies). The key underlying question that this causal link analysis looks to address is, if using digital tools for company registration operations leads to an increase in the number of instances in which legal certainty is challenged.

To achieve this objective, the study team carried out a data collection and analysis exercise that has yielded two fundamental data sets:

- Categorisation of the processes required for registering a company in Denmark and Germany, with a specific focus on the availability of digitalised processes; and
- Data on the Danish and German legal frameworks governing the authentication of the required documentation for registering a company.

This data collection and analysis exercise was further complemented with input from relevant stakeholders, e.g. business registers and notaries in Germany. By taking the results from this data collection and analysis exercise into consideration, the panel of experts was then invited to verify or reject causal link propositions compiled by the study team in the form of the following generalised pair of but-for tests:

**But for** the use of digital tools in (cross-border) company registration, would the impacts on legal certainty have occurred?

**But for** the impacts on legal certainty, is there any other cause other than the use of digital tools in cross-border direct online company registration that would lead it to occur?

The output of this case study should be interpreted as: (i) a description of the EU legal certainty landscape with regard to company registration operations and, in particular, an overview of the legal certainty standards in Denmark and Germany; (ii) a descriptive overview of the legal and technological platforms that seek to enable company registration operations in Denmark and Germany; (iii) the results of an in-depth analysis seeking to establish or deny causality between the use of digital tools for company registration operations and impacts on legal certainty.

**Recapitulation of the availability of digital tools for company registration operations in Germany and Denmark**

In Germany, digital tools are available for the registration of companies, although the process is not end-to-end. A notary must make use of the EGVP (Elektronisches Gerichts- und Verwaltungspostfach), i.e. a special electronic communication platform for court communication. The system makes use of the OSCI 1.2. Internet protocol and is protected through a two-step authentication system. Given that the organisation of the courts is a competence of the Länder, the justice ministries of the different Länder are mandated to set up an electronic system for company registration (i.e. through §8a Abs 2 HGB: each Land issued executive regulation to make the use of EGVP mandatory for company registration). Companies are then registered in the commercial register (i.e. Handelsregister), which is kept by the registration courts; according to §8 Abs. 1 HGB (i.e. Handelsgesetzbuch – Commercial Code). The entries in the register are kept electronically.

In order to initiate the registration process, companies first have to make an application for registration in the commercial register. The registration court decides if all formal requirements are fulfilled and if all necessary information is complete. On successful completion of this stage, the court proceeds to include the company in the commercial register (§25 HRV). Registration is obligatory for
limited liability companies (i.e. AG, GmbH), which have legal personality\textsuperscript{164}. Under §12 HGB, each application for company registration must take place by means of an electronic notarial official certified deed. In practice, this official certified deed is the registration application protocol, which must be drafted by a notary and signed by the company director(s)\textsuperscript{165}.

The registration application protocol for limited liability companies must be accompanied by official certified copies of the following documents\textsuperscript{166}:

- Company contract (i.e. which has a notarial official certified deed);
- A list of directors (i.e. for GmbH) and board members (i.e. AG);
- A declaration that the directors and / or board members are not prohibited to exercise a profession in the sector of operation and that they have not been convicted of insolvency or economic crimes.

These accompanying documents are electronically transferred to the register court, i.e. as governed by §39a Beurkundungsgesetz, which require that document copies bear the electronic signature of the notary. The court then proceeds to publicise the entry in the commercial register, by electronic means (§10 HGB and § 27 HRV), on successful completion of the registration process.

In Denmark, companies can be set up using direct, end-to-end digital tools through the www.virk.dk website. The rules governing foreign businesses differ depending on whether the foreign business is temporary or permanent\textsuperscript{167}. Every step of the process can be done using www.virk.dk regardless of the national or foreign nature of the company being registered\textsuperscript{168}, as long as individuals seeking to register a company are in possession of a NemID electronic signature\textsuperscript{169}. The NemID digital signature protocol is based on Public Key Infrastructure (PKI) technology\textsuperscript{170}, which implies that the user is issued a digital signature consisting of a private key and a public key certificate\textsuperscript{171}. Individuals seeking to register a company in Denmark can also print the online application used for the registration process and send it to the Danish Business Authority by post\textsuperscript{173}.

An important recent amendment regarding company registration is "the executive act on registration and disclosure of information regarding owners in the Danish Business Authority"\textsuperscript{174}. This change came into force in July 2017. This executive act requires that real owners are visible in the business register (CVR), with the only exemptions being listed companies and sole proprietors. Prior to this, only legal owners had to be disclosed in the register\textsuperscript{175}. The rules regarding real owners are an implementation of the Fourth Anti Money Laundering Directive (AML)\textsuperscript{176}.

The company registration process in Denmark can be summarised as follows:

- For certain temporary services in Denmark, individuals must notify the Register of Foreign Service Providers (RUT) by providing specific company documentation\textsuperscript{177};
- An application form must be accessed online for the registration of a foreign company in Denmark\textsuperscript{178};

\textsuperscript{164} §7 GmbH; §36 AktG.
\textsuperscript{165} See http://elrv.info/de/elektronischer-rechtsverkehr/praxisfragen-elrv.php?we_objectID=193
\textsuperscript{166} § 8 GmbHG; § 37 AktG.
\textsuperscript{167} https://danishbusinessauthority.dk/what-are-rules.
\textsuperscript{168} https://danishbusinessauthority.dk/where-register.
\textsuperscript{169} See https://www.nemid.nu/dk-da/
\textsuperscript{170} See https://www.nemid.nu/dk-da/om-nemid/sikkerheden_bag_nemid/teknikken_bag_nemid/
\textsuperscript{171} PKI is a common digital protocol used to establish end-to-end encryption of numerous digital applications and online environments. As an example, the structural HTTPS web protocol is based on PKI encryption.
\textsuperscript{172} The original legislative framework to regulate the use of digital signature protocols (i.e. the Danish Act on Electronic Signatures and Related Notices) was effectively repealed on 1 July 2016, and further overhauled by the Electronic Identification and Confidentiality Regulation for Electronic Transactions in the Internal Market (eIDAS) Regulation.
\textsuperscript{173} For additional information, see https://danishbusinessauthority.dk/business-registration
\textsuperscript{174} Executive Act Nr. 557 1 June 2016.
\textsuperscript{175} Since 2014, legal owners have had to register in The Public Register of Owners (Det Offentlige Ejregister).
\textsuperscript{177} https://danishbusinessauthority.dk/register-foreign-service-providers-rut-0.
\textsuperscript{178} https://indberet.virk.dk/myndigheder/stat/ERST/Registration_of_Non-Danish_Company__Start_-\_40112.
• Registering a Danish company requires a Danish social security number (CPR), and a Danish NemiID. The application form for this form of limited liability companies is provided in Danish179; and
• As a general rule, individuals looking to register a company in Denmark can submit any formal document in Danish and English. However, foreign companies should note that some application forms are solely in Danish.

An overview of legal certainty

In addition to national-level recognition, the concept of legal certainty has been recognised as one of the general principles of European Union law since the 1960s180, and states that laws must be written in a precise, clear, certain manner, and that their implications are foreseeable especially when applied to financial obligations181. As noted by the Fondation pour le droit continental, no system of law would claim legal insecurity or uncertainty to be a base or objective182. However, while every legal system aims at certainty and security, such security is determined at an economic, political and social level. From this perspective, it would seem challenging to conceptualise legal certainty and attribute an unequivocal strictly legal definition to it183. However, although the scope and definition of legal certainty are difficult to establish, its components are not considered by several legal experts to be impossible to grasp184. Generally, legal certainty represents the qualitative value of a legal system resulting from demands in terms of the quality of standards and the quality of the interpretation the judge gives them185. Hence, legal certainty implies that laws should be at least intelligible, accessible and stable, and have predictable effects over time.

In the context of this study, the legal certainty target area concerns any issues which might undermine the perception that company law operations, when carried out through less traditional, digital media are as legally valid and likely to be authentic, or at least, as easy to ratify as when they had been done using paper. Specifically, this domain focuses on issues surrounding the security and authenticity of legal documents, and how to ensure that, in the instance where a document is not submitted in person, it was submitted by the individual who claimed to submit it, and that they had the authority to act on behalf of the company they claimed to represent. This rationale is extendable to the documents themselves, which is to say that legal certainty does not apply exclusively to instances where individuals take specific actions to authenticate company law processes, but also to the processes that relate to the (legal) authentication of the documents in question.

In addition to ensuring the authenticity of legal documents, the focus of this target area also relates to issues around storing such large volumes of legal documents and ensuring that they are secure. It is essential for the smooth functioning of the Single Market that there is the perception of certainty of legal documents as being accurate and binding. Another relevant aspect regarding the impacts of using digital tools in the context of company law operations on the legal certainty target area is that of corruptive practices in the interface of companies and business registers (i.e. as well as other relevant public bodies); for example, in the instance where an individual seeks to register a new company without the required legal documentation by bribing a public body official.

The legal certainty standards of Denmark and Germany: contextualisation through proxy-indicators

Legal certainty is an inherently subjective concept, given the array of economic, social and political domains it encloses. However, some manifestations of impacts on legal certainty can be qualitatively and semi-quantitatively measured through the analysis of proxy-indicators. In this instance, the study team considers three data sets to be credible proxy-indicators of the standards of legal certainty:
• The Fondation pour le droit continental Index of Legal Certainty186 (i.e. henceforth referred to as Index of Legal Certainty or ILC). This index adopts a case method approach to the process of quantifying legal certainty in different countries: this approach consists in defining a model case

182 Fondation pour le droit continental (2015) Index of Legal Certainty – Report for the Civil Law Initiative
183 Fondation pour le droit continental (2015) Index of Legal Certainty – Report for the Civil Law Initiative
185 Fondation pour le droit continental (2015) Index of Legal Certainty – Report for the Civil Law Initiative
186 Fondation pour le droit continental (2015) Index of Legal Certainty – Report for the Civil Law Initiative
in which a diverse set of legal certainty challenges emerges and further questioning a legal specialist to observe and judge how such a case should be resolved on a country-by-country basis\textsuperscript{187};

- The World Justice Project Rule of Law Index\textsuperscript{188}. This index establishes a quantitative ranking of the rule of law standards at a global scale through a collection of answers to standardised questionnaires. Specifically, the index is compiled through the analysis of answers to these questionnaires on eight dimensions, namely: (i) constraints on government powers; (ii) absence of corruption; (iii) open government; (iv) fundamental rights; (v) order and security; (vi) regulatory enforcement; (vii) civil justice; (viii) criminal justice\textsuperscript{189}; and

- The Transparency International Corruption Perceptions Index (CPI)\textsuperscript{190}. This is based on the analysis of 13 different surveys and assessments from 12 different institutions, namely: World Justice Project, World Bank, World Economic Forum, The PRS Group, Political and Economic Risk Consultancy, International Institute for Management Development, Global Insight, Freedom House, Economist Intelligence Unit, Bertelsmann Foundation, African Development Bank\textsuperscript{191}.

The ILC has analysed and ranked 13 countries according to their legal certainty standards across six legal proceedings sectors: (i) contracts, (ii) disputes, (iii) property, (iv) liability, (v) corporate, (vi) employment. The results of this analysis and ranking exercise are displayed in Table 19. From the 13 countries analysed by the ILC, which did not include Denmark, Norway ranked the highest in legal certainty standards, followed by Germany. The minimal difference in average legal certainty scores attributed to Norway and Germany is noteworthy, especially considering the similarity between Norway and Denmark with regard to the use of digital signatures for company registration operations\textsuperscript{192}.

In addition, summarised versions of the country reports for Denmark and Germany, as extracted from the Rule of Law Index (and compiled by the World Justice Project), are presented in Figure 11. According to this index, Denmark was ranked first at a global scale with regard to standards of rule of law, whereas Germany was ranked sixth. However, the average scores attributed to these two countries were considerably similar (i.e. 0.89 and 0.83 on a 0-to-1 scale, respectively). The countries ranked between Denmark and Germany are, in descending rank order, Norway, Finland, Sweden, and the Netherlands.


\textsuperscript{188} See https://worldjusticeproject.org/sites/default/files/documents/RoLI_Final-Digital_0.pdf

\textsuperscript{189} A detailed description of the methodological approach taken by the World Justice Project in establishing the Rule of Law Index is available at https://worldjusticeproject.org/our-work/wjp-rule-law-index/wjp-rule-law-index-2016/methodology

\textsuperscript{190} See https://www.transparency.org/news/feature/corruption_perceptions_index_2016

\textsuperscript{191} A detailed description of the methodology underlying the compilation of Transparency International’s CPI is available at https://www.transparency.org/news/feature/corruption_perceptions_index_2016

\textsuperscript{192} For a summarised overview of the limited liability company registration process in Norway, see http://www.doingbusiness.org/data/exploreeconomies/norway/starting-a-business
Table 19: (Extracted from Fondation pour le droit continental’s *Index of Legal Certainty, 2015*). Rankings of legal certainty standards in 13 selected countries across six legal proceedings sectors.

Figure 11: (Extracted from the *World Justice Project Rule of Law Index, 2016*). Country profiles and *Rule of Law* rankings in Germany and Denmark.
The Corruptions Perception Index compiled by Transparency International also includes rankings for Denmark and Germany, as outlined in Figure 12. In fact, Denmark was ranked as the least corrupt country in the world, followed by New Zealand, Finland, Sweden, Switzerland, Norway, Singapore, the Netherlands, Canada, and Germany. In this instance, the overall Denmark and Germany scores were 90 and 81, respectively.

Although the three sets of data presented in this section do not address, analyse or rank legal certainty standards in Denmark and Germany directly with regard to the document authentication procedures in the context of company registration operations, the similarity in the overall legal certainty standards between these two countries (i.e. as specifically reflected in the CPI and Rule of Law indexes) is notable.
Figure 12: (Extracted from Transparency International’s Corruption Perceptions Index, 2016).
Stakeholder perception on the legal certainty impacts of using digital tools for company registration operations

The study team has retrieved a generalised overview of the perceived legal certainty impacts of using digital tools for company registration in Germany. This was carried out in addition to the qualitative data collection exercise underlying Sections 5 and 6 of this report. Additionally, a detailed categorisation of the technological platforms that Germany and Denmark have in place to enable (cross-border) company registration, is presented in Section 5.1 of this report.

All interviewed stakeholders in Germany stressed the importance of the notary’s role in ensuring legal certainty in the course of the process of the registration of company operations. Firstly, the most important task of the notary is the verification and certification of the identity of the person, who conducts the company operation. It was pointed out by the interviewed stakeholders that with the current stand of technology, it is impossible to have a similar degree of certainty over a person’s identity by electronic means. Due to the role of the notary, the contacted stakeholders consider the impact of using digital tools for company registration operations on legal certainty to be low. This is in stark contrast with the data presented in the previous section, whereby countries allowing for direct, end-to-end digital tools in the context of company registration operations consistently ranked higher than Germany in legal certainty and rule of law indexes.

Secondly, stakeholders in Germany unanimously considered that the notary ensures that all legal requirements (e.g. form and content of the company contracts, the requirements on the company capital, directors, etc.) with regard to company operations will be fulfilled. This aspect of the notary’s role must be seen in connection with the notary’s obligation to give counselling and legal advice to the persons conducting the company operation.

The German Notary Chamber and the BDI/BDA (German Business Representation) mentioned an additional factor, which influences the legal certainty of the commercial register and of company operations: in cross-border company operations, the low quality and the inaccuracy of the information on the foreign company constitutes a specific threat for legal certainty. The low quality of the information in foreign registers is reported to be problematic since it affects the accuracy – and thus, the legal certainty – of the German commercial register, in the case where the cross-border company operation will be registered in Germany.

Interviewed officials of the German Ministry of Justice also mentioned that the use of a digital company register has a low but positive impact on the legal certainty since the upload of electronic data allows the corresponding systems to automatically recognise mistakes in data provided by individuals seeking to register a company.

Stakeholders contacted

In order to complement the preliminary data presented in the previous section, the study team has contacted the following set of stakeholders:

- Federal Notarial Chamber of Germany and Civil Law Notaries;
- German Business Representation – BDI / BDA;
- German Federal Ministry of Justice and Consumer Protection;
- Association of German Chambers of Industry and Commerce.

Furthermore, the following stakeholders have been contacted without response:

- Danish Central Business Registry;
- Danish Business Authority.

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193 In this instance, the study team was unable to retrieve qualitative data through direct engagement with stakeholders in Denmark. Therefore, the qualitative data presented in this sub-section is exclusively applicable to the legal certainty impacts of company registration operations in Germany.


196 See http://www.bmjv.de/EN/Home/home_node.html for more information.

197 See https://www.dihk.de/en for further information.
Causal link assessment

A collection of causal link propositions with regard to potential legal certainty impacts of using digital tools in the context of company registration operations in Denmark and Germany is presented in this section. In this context, there are two causal link propositions (i.e. in the form of but-for tests) with regard to legal certainty, which are as follows:

Causal link proposition #1

**But for** the use of digital tools in (cross-border) end-to-end, direct online company registration, would the recorded higher ranking of Denmark with regard to rule of law standards (as measured by the World Justice Project) in comparison to Germany have occurred?

**But for** the recorded higher ranking of Denmark with regard to rule of law standards in comparison to Germany, is there any other cause other than the use of digital tools in cross-border direct online company registration that would lead it to occur?

**Judgement:** as outlined in Figure 11, and throughout *The legal certainty standards of Denmark and Germany: contextualisation through proxy-indicators* sub-section, the rule of law index rating (i.e. and, by proxy, the legal certainty standard) of a country is measured through the analysis of several domains, including (i) Government Powers, (ii) Absence of Corruption, (iii) Open Government, (iv) Fundamental Rights, (v) Order and Security, (vi) Regulatory Enforcement, (vii) Civil Justice, and (viii) Criminal Justice. It would be limiting to assume a direct correlation between the use of digital tools for company registration operations and impacts on legal certainty and / or rule of law index ratings. As described in the introductory section of this case study, legal certainty is a complex concept with a wide definition scope that involves different fields, such as ethics, politics, sociology, and law. A causal link between the use of digital tools for company registration operations and legal certainty impacts in Germany and Denmark cannot be established. N.B. However, as mentioned above, Denmark (and other Scandinavian countries with similar policies with regard to the use of digital tools for company law operations in general, such as Norway and Sweden), which enables the use of direct and end-to-end digital tools for company registration, has consistently scored higher than Germany in both the Rule of Law Index and Corruption Perceptions Index, as outlined in the previous sections.

Causal link proposition #2

**But for** the use of digital tools in (cross-border) end-to-end, direct online company registration, would the recorded higher ranking of Denmark with regard to transparency and corruption standards (as measured by Transparency International) in comparison to Germany have occurred?

**But for** the recorded higher ranking of Denmark with regard to transparency and corruption standards (as measured by Transparency International) in comparison to Germany, is there any other cause other than the use of digital tools in cross-border direct online company registration that would lead it to occur?

**Judgement:** as outlined in Figure 12, and throughout *The legal certainty standards of Denmark and Germany: contextualisation through proxy-indicators* sub-section, the Corruption Perceptions Index rating (i.e. a proxy-contributing factor to the legal certainty standard) of a country is measured through the analysis of several domains and based on the analysis of 13 different surveys and assessments from 11 different institutions, namely: World Justice Project, World Bank, World Economic Forum, The PRS Group, Political and Economic Risk Consultancy, International Institute for Management Development, Global Insight, Freedom House, Economist Intelligence Unit, Bertelsmann Foundation, African Development Bank. It would be limiting to assume a direct correlation between the use of digital tools for company registration operations and impacts on legal certainty and / or Corruption Perceptions Index ratings. As described in the introductory section of this case study, legal certainty is a complex concept with a wide definition scope that involves different fields, such as ethics, politics, sociology, and law. A causal link between the use of digital tools for company registration operations and legal certainty impacts in Germany and Denmark cannot be established. N.B. However, as mentioned above, Denmark (and other Scandinavian countries with similar policies with regard to the use of digital tools for company law operations in general, such as Norway and Sweden), which enables the use of direct and end-to-end digital tools for company registration, has consistently scored higher than Germany in both the Rule of Law Index and Corruption Perceptions Index, as outlined in the previous sections.
9.3.3 Case study 3: Fraudulent / illegal activities associated to the use of digital tools in company law operations

The fraud-related impacts of using digital tools for the registration of limited liability companies: a comparative case study between companies registered in Estonia, Portugal and Belgium

Introduction

The main objective of this case study is to provide a well-rounded understanding of the potential impacts relating to fraudulent / illegal activities of using digital tools for company registration operations in the Member States. Specifically, this case study looks to provide an overview of the relevant criminal impacts (e.g. money laundering, tax evasion, ID theft) in the context of using digital tools for company registration operations by making use of two analytical approaches:

- A mapping exercise of the proxy-incidence of fraudulent / illegal activities directly related to company registration, pre- and post-digitalisation of company registration operations in Estonia and Portugal; and
- A comparative analysis between the fraudulent and criminal activities related to company registration in Belgium vs Portugal and Estonia.

These analytical approaches will be conducted in the context of the hypothesis concerning the potential impacts of using digital tools for company registration on fraudulent / illegal activities in the cases of Estonia and Portugal – using Belgium as a counter-example. In this instance, Belgium was chosen as the counter-example because, unlike Portugal and Estonia, it does not allow for the use of direct and end-to-end digital tools for company registration purposes but has developed an eID system for its citizens. In this context, the research hypothesis for this case study is as follows:

**Hypothesis:** The use of digital tools for cross-border direct online company registration leads to the facilitation of fraud-related offences (e.g. identity theft, money laundering) as a result of less rigorous authentication control measures when registering a new company, e.g. bypassing the requirement for in-person presence at a local business authority.

Specifically, this case study looks to establish or deny a causal link between the use of digital tools for company registration in Portugal and Estonia, and the incidence of fraudulent / illegal activities such as money laundering, tax evasion and ID theft, using Belgium as a counter-example. The key underlying question that this causal link analysis looks to address is, if using digital tools for company registration operations facilitates the perpetration of these criminal activities, or if it enables the relevant authorities to trace suspicious activity more effectively and efficiently.

To achieve this objective, the study team has carried out a data collection and analysis exercise that has yielded two fundamental data sets:

- Categorisation of the technological and legal platforms that enable and regulate (cross-border) company registration operations in Estonia and Portugal; and
- Mapping of the processes required for (cross-border) company registration in Belgium.

This data collection and analysis exercise was further complemented with input from relevant stakeholders, e.g. business registers in Portugal, Estonia, and Belgium. By taking the results from this data collection and analysis exercise into consideration, the panel of experts was then invited to verify or reject causal link propositions compiled by the study team in the form of the following generalised pair of but-for tests:

**But for** the use of digital tools in (cross-border) end-to-end, direct online company registration, would the fraud- and illegal activities-related impacts have occurred?

**But for** fraud- and illegal activities-related impacts, is there any other cause other than the use of digital tools in cross-border direct online company registration that would lead it to occur?

The output of this case study should be interpreted as: (i) a description of the EU criminal landscape with regard to company registration operations and, in particular, money laundering and tax evasion; (ii) a descriptive overview of the legal and technological platforms that seek to enable company
registration operations in Portugal, Estonia and Belgium; (iii) the results of an in-depth analysis seeking to establish or deny causality between the use of digital tools for company registration operations and the incidence of illegal and fraudulent activities in Portugal, Estonia and Belgium.

Recapitulation of the availability of digital tools for company registration operations in Estonia, Portugal and Belgium

Portugal and Estonia are more advanced than Belgium with regard to the enablement of peer-to-peer tools for company registration operations. Specifically, the digital tools made available in Portugal\textsuperscript{198} and Estonia\textsuperscript{199} operate in a direct, end-to-end manner, allowing individuals to register a company without the need of process intermediaries, such as notaries, civil officers and lawyers. This is not the case when an individual seeks to register a company in Belgium, where in-person appearance before a notary and register court is required for the incorporation of limited liability companies; registration can then be carried out through an online tool hosted by the Belgium Chamber of Commerce after the incorporation of a company has been approved by a registry court.

In Estonia, the Commercial Code allows company registration operations to be done online through the Company Registration Portal\textsuperscript{200}. In order to register a private limited liability company through the portal, individuals must have an Estonian ID-card, allowing for person identification and digital signature authentication. Limited liability companies can be electronically registered in the business register if all persons related to the company (e.g. board members, founders, council members) have an Estonian, Latvian, Belgian, Finnish ID card; Estonian or Lithuanian mobile ID, or Estonian e-Residency card. If none of the company founders have one of the above ID-cards, the company must be established through a notary. Submitting an application for company registration consists of five steps: preparation, signing, payment of share capital and state fee, and submission, i.e. share capital and state fee can be paid electronically directly through the portal. Submitted applications are reviewed by the register within one working day and a status notification is sent via email.

In Belgium, depending on the legal form of the company, applicants may be required to appear before a notary or to fill in forms and forward them to the registry or the authorised offices. Company registration in Belgium is generally neither direct nor end-to-end. For the main legal forms (i.e. SPRL, SA), it is still mandatory to physically appear before a notary and to register in-person at the registry. For companies with all other legal forms, registration can be carried out using digital tools\textsuperscript{201}.

In Portugal, it is possible to register a company through an online register service within the Citizen's Portal. The portal contains an entrepreneur's desk, the single point of access to services related to business activities. The entrepreneur's desk is a government initiative whose aim is to create a one-stop internet access point with all relevant information for businessmen, entrepreneurs and business-related services. It allows various services to be carried out, e.g. starting a business, registering a trademark, obtaining certificates. Concerning company registration, not all types of companies can be registered online. In fact, the legal framework of Online Company (Decree-Law 125/2006 of June 29) only allows the constitution, by electronic means, of commercial companies and civil companies in commercial form (i.e. private companies limited by quota shares, one-person limited liability companies and public limited companies). Additionally, in order to register a company online, the applicant must have a citizen's card (i.e. Cartão do cidadão). If the applicant is of a nationality other than Portuguese a Fiscal Identification Number from the Portuguese Financial services is needed. Estonian and Spanish citizens are exempt from this process and may use their national identity card.

An overview of tax evasion and money laundering in the EU

The recent information leaks on offshore financial flows provided by the Panama papers and further leaks\textsuperscript{202} have re-iterated the importance and magnitude of money laundering and tax evasion, among other crimes. The main objective of offshore centres around the world is to provide secrecy, which can subsequently contribute directly to hiding of illegal activities, criminal ownership of assets, and

\textsuperscript{198} In Portugal, companies can be incorporated and registered though an online register service within the wider electronic platform known as Citizen's Portal, available online at https://www.portaldocidadao.pt.

\textsuperscript{199} In Estonia, companies can be incorporated and registered directly though the Company Registration Portal, available online at https://ettevotjaportal.rik.ee/.

\textsuperscript{200} The Company Registration Portal can be accessed at https://ettevotjaportal.rik.ee/

\textsuperscript{201} For these companies, it is not mandatory to register electronically, and still possible to do it physically through the registry of the court of commerce. In Belgium registration through digital tools is cheaper than physical registration (i.e. 220€ compared to 270€).

\textsuperscript{202} The International Consortium of Investigative Journalists - https://panamapapers.icij.org/
criminal identity\textsuperscript{203}. The term offshore has two definitions, and depending on the definition used, there are between 20 and 92 offshore centres around the world\textsuperscript{204}; the two definitions are as follows:

- \textit{“The term offshore is not necessarily restricted to tiny or remote islands. It can also be applied to any location (e.g. New Jersey, Delaware, City of London, Switzerland) that seeks to attract capital from non-residents by promising low / no taxes, low regulation, secrecy and confidentiality”\textsuperscript{205};}

- \textit{“(…) jurisdictions that specialise in attracting the registration of investment vehicles with foreign sponsors, e.g. shell companies, trusts, special purpose vehicles, and mutual funds”\textsuperscript{206}.}

The processes that underlie money-laundering operations (i.e. whether with the purpose of tax evasion or not) are complex, but can generally be broken down according to three phases: \textit{placement}, \textit{layering}, and \textit{integration}\textsuperscript{207}. The money laundering techniques used in each phase vary widely, but include the following:

- **Techniques for money laundering in the placement phase** – currency smuggling, travellers cheques, gambling / casinos;

- **Techniques for money laundering in the layering phase** – loans at low or zero interest rates, back-to-back loans, money exchange offices, money transfer offices, insurance market, fictitious sales and purchases, shell companies, trust offices, special purpose entities (vehicles), underground banking, and foreign currency black market; and

- **Techniques for money laundering in the integration phase** – capital market investments, derivatives, real estate acquisition, investments in industries with cash-intense and / or high value, trade base money laundering.

In addition to the well-known methods and techniques listed above, additional money laundering risks associated to technological adoption have already been identified and are mentioned in the literature\textsuperscript{208}, e.g. online banking, e-cash, e-gold, pre-paid SIM cards for mobile phones, and virtual currencies such as \textit{Bitcoin} and \textit{Ether} / \textit{Ethereum}.

**Money laundering and tax evasion as a predominantly European issue**

Individuals seeking to avoid and / or evade taxes and launder money have historically preferred doing so in countries that have a well-established financial services sector, solid financial markets, a low level of corruption, high imports and exports, high Gross Domestic Product, and a high degree of secrecy in the banking sector\textsuperscript{209}. These preference factors become apparent upon examination of the maps provided in Figure 13 and Figure 14, which highlight the absolute and relative-to-GDP threats of money laundering within the EU-27\textsuperscript{210} as calculated by ECOLEF (2012)\textsuperscript{211}. Moreover, Figure 15 displays the origin and destination of wealth held in offshore centres at global level in 2011. From the USD 7.8 trillion of global offshore wealth, Europe holds by far the highest share, with USD 3 trillion\textsuperscript{212}, followed by Asia-Pacific, Middle East, Africa, Latin and North America, Caribbean, and Panama, respectively.

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\textsuperscript{203} European Parliament and Unger, B. (2017) \textit{Offshore activities and money laundering: recent findings and challenges}

\textsuperscript{204} European Parliament and Unger, B. (2017) \textit{Offshore activities and money laundering: recent findings and challenges}

\textsuperscript{205} Sikka, P. (2003), The role of offshore financial centres in globalisation, \textit{Accounting Forum, Vol. 27, No. 4}


\textsuperscript{207} N.B. For a detailed description of what each money laundering phase entails, as well as for an explanation of each technique, refer to European Parliament and Unger, B. (2017) \textit{Offshore activities and money laundering: recent findings and challenges}

\textsuperscript{208} European Parliament and Unger, B. (2017) \textit{Offshore activities and money laundering: recent findings and challenges}

\textsuperscript{209} European Parliament and Unger, B. (2017) \textit{Offshore activities and money laundering: recent findings and challenges}

\textsuperscript{210} N.B. Croatia was not a member of the EU in 2012

\textsuperscript{211} European Commission - Project ECOLEF (2009-2012), \textit{The Economic and Legal Effectiveness of Anti-Money Laundering and Combating Terrorist Financing Policy.}

\textsuperscript{212} From the USD 3 trillion of offshore wealth invested in Europe, USD 2.82 trillion is invested in the UK (including the Channel Islands) and Dublin, Switzerland, and Luxembourg.
**Figure 13:** Adapted from Project ECOLEF (2012). Absolute money-laundering threat in the EU-27 in 2012.

**Figure 14:** Adapted from Project ECOLEF (2012). Money-laundering threat in the EU-27 in 2012 as percentage of GDP.
Figure 15: Adapted from Unger, B. (2017). Origins and destinations of offshore wealth in 2011.

<table>
<thead>
<tr>
<th>Destination of offshore wealth</th>
<th>Switzerland</th>
<th>UK, Channel Islands, and Dublin</th>
<th>Luxembourg</th>
<th>Caribbean and Panama</th>
<th>Hong Kong and Singapore</th>
<th>US</th>
<th>Other</th>
<th>Regional total</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>0.06</td>
<td>0.23</td>
<td>0</td>
<td>0.36</td>
<td>0.05</td>
<td>≤ 0</td>
<td>0.03</td>
<td>0.7</td>
</tr>
<tr>
<td>Europe</td>
<td>1.04</td>
<td>0.74</td>
<td>0.54</td>
<td>0.14</td>
<td>0.09</td>
<td>0.12</td>
<td>0.27</td>
<td>3</td>
</tr>
<tr>
<td>Asia-Pacific</td>
<td>0.25</td>
<td>0.36</td>
<td>0.06</td>
<td>0.15</td>
<td>0.7</td>
<td>0.17</td>
<td>0.17</td>
<td>1.8</td>
</tr>
<tr>
<td>Latin America</td>
<td>0.24</td>
<td>0.08</td>
<td>0.61</td>
<td>0.18</td>
<td>0</td>
<td>0.38</td>
<td>0.02</td>
<td>0.9</td>
</tr>
<tr>
<td>Middle East and Africa</td>
<td>0.49</td>
<td>0.52</td>
<td>0.04</td>
<td>0.06</td>
<td>0.02</td>
<td>0.04</td>
<td>0.26</td>
<td>1.4</td>
</tr>
<tr>
<td>Booking center total</td>
<td>2.1</td>
<td>1.9</td>
<td>0.6</td>
<td>0.9</td>
<td>0.9</td>
<td>0.7</td>
<td>0.7</td>
<td>7.8</td>
</tr>
</tbody>
</table>

Legend: Red - More than 0.5 trillion USD, Yellow - Between 0.1 and 0.5 trillion USD, Green - Lower than 0.1 trillion USD, Blue - Regional and booking center totals.
Overview of proxy-incidence of money laundering and tax evasion in Portugal, Estonia and Belgium

Generally, the collection of quantitative data with regard to the incidence of money laundering and tax evasion, as well as other criminal activities potentially related to company registration operations (e.g. ID theft, pyramid schemes), remains a challenging exercise due to lack of readily available and reliable data sets. Some of the underlying issues to this data availability challenge have been explicitly outlined in the Financial Action Task Force’s 2015 report on Anti Money Laundering and Countering Financing of Terrorism Data and Statistics and include the following:

- Information from a multiplicity of stakeholders is required for a comprehensive understanding of the issue, e.g. Financial Intelligence Units, Law Enforcement Agencies, prosecution authorities, judicial systems, customs agencies, regulators, policy makers, privacy sector entities, among others;
- System differences across different stakeholders usually results in incompatible data formats, which can often lead to similar or related types of data being reported in different ways, making data consolidation at the national and international levels difficult or impossible;
- Lack of clarity and standardisation on the terminology and definitions around statistical indicators; and
- Lack of international-level guidance on what indicators should be collected at national level.

In this context, the quantitative information considered in this case study as evidence for the causal link analysis presented in the next section is based on two fundamental data sets, which are herein considered to be loose proxy indicators for the incidence of tax evasion and money laundering:

- The size of the shadow economy as percentage of GDP in Estonia, Portugal and Belgium from 2003 to 2015, as estimated by Schneider (2015) in Size and development of the shadow economy of 31 European and 5 other OECD countries from 2003 to 2015: Different Developments; and
- The total number of offshore corporate incorporations from Estonia, Portugal and Belgium between 1991 and 2015, as reported by the International Consortium of Investigative Journalists in the so-called Panama Papers.

Figure 16 illustrates the progression of the size of the shadow economy in Estonia, Portugal and Belgium from 2003 to 2015 as a percentage of GDP, including annotations of relevant achievements in these countries with regard to implementation of digitalisation. No notable trends can be observed from the graph displayed with regard to the influence of digitalisation on the size of the shadow economy in the three countries. However, a steady decrease (with the exception of the period between 2008 and 2009) in the size of the shadow economy of the three countries between 2003 and 2015 seems apparent.

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215 At this stage, the study team could not find relevant quantitative data sets to explore the incidence of other fraudulent / illegal activities in the context of company registration operations, such as ID theft, pyramid schemes, defrauding investors.
216 In this context, the estimated size of the shadow economy is considered as a relevant indicator of potential causality between company registration operations and fraudulent / illegal activities in the sense that shell and shelf companies might, in some instances, be used as vehicles for money laundering and tax evasion.
217 Offshore incorporations from other countries to Estonia, Portugal and Estonia are not considered herein as these countries are not listed in the International Consortium of Investigative Journalists’ database as destinations of offshore wealth. Moreover, these countries were not considered to retain a considerable share of European offshore wealth in previous studies.
Figure 16: Size of the shadow economy (as % of GDP) in Estonia, Portugal and Belgium, from 2003 to 2015\(^{219}\).

In addition to the data provided above, the study team has sourced the year-on-year (YoY) total number of offshore company incorporations from Estonia, Portugal and Belgium, as reported by the *International Consortium of Investigative Journalists*. This source data, in the form of number of entries in the *Panama Papers* per country, has been used in previous instances as a loose proxy indicator for the incidence of tax evasion and money laundering\(^{220}\). In this instance, the YoY breakdown of this source data, in conjunction with the provided annotations, provides additional insight into potential causal links between the use of digital tools for public administration operations (i.e. including company registration) and the (proxy-) incidence of tax evasion and money laundering, as illustrated in Figure 17. Specifically, the graph in Figure 17 outlines the total number of offshore company incorporations from Portugal, Estonia and Belgium from 1991 to 2015, exactly as listed in the *ICIJ* database\(^{221}\). A brief analysis of this graph reveals that the number of offshore company incorporations from Estonia is the highest among the three countries throughout the 1991 to 2015 period; in similar fashion, it is apparent that the level of offshore company incorporations from Belgium (i.e. from 1999 to 2015) seems negligible in comparison to that of Estonia and Portugal.

In addition to these findings, it is also apparent that the level of offshore company incorporations from Estonia is considerably higher after 1997 in comparison to the period between 1991 to 1996 (i.e. four in 1996 and 66 in 1997). This coincides with the year in which Estonia introduced its first set of legislation to allow for the use of digital tools for company registration operations (i.e. the *eBusiness* initiative)\(^{222}\).

\(^{219}\) Source: Schneider, F. (2015) *Size and development of the shadow economy of 31 European and 5 other OECD countries from 2003 to 2015: Different Developments.*


\(^{221}\) Available at https://offshoreleaks.icij.org/

Figure 17: Total number of offshore company incorporations from Estonia, Portugal and Belgium as reported by the ICIJ.
Stakeholder perception on the fraudulent / illegal activities-related impacts of using digital tools for company registration operations

The study team has retrieved a generalised overview of the perceived fraudulent / illegal activities impacts of using digital tools for company registration in Portugal, Estonia, and Belgium. This was carried out in addition to the qualitative data collection exercise underlying Sections 5 and 6 of this report. Additionally, a detailed categorisation of the technological platforms that Portugal and Estonia have in place to enable (cross-border) company registration, is presented in Section 5.1 of this report.

In Estonia, interviewed stakeholders stated that one of the main vulnerabilities of the company registration process in the context of fraudulent / illegal activities concerns the instance where an ID-card or the e-Business Register login password are lost or stolen. These stolen or lost credentials could then be used to establish a new company under the identity of the person who lost them. This risk, however, is considered to be small given that the normal procedure for dealing with this instance involves notifying the police and the re-issue of a new ID-card or login credentials. Another vulnerability was pointed out by an Estonian Trade Union representative: “the ease of registering or amending data has resulted in cases of bad faith activity, whereby companies do not pay salaries to their employees and move on to a new legal entity to resume operations”.

The general perception of interviewed stakeholders was that the level of criminal and fraudulent activities in Estonia has not increased with the ability to establish companies in a digital manner.

In Portugal, the perception among interviewed stakeholders is that the available digital tools are supported by secure systems, which contribute to reduce risks and provide the authorities with tools to better monitor transactions and identify illegal or fraudulent activities, e.g. cartelised industries and unfair competition, tax evasion. In fact, the majority of interviewed stakeholders believe that the digital tools for company registration currently available in Portugal allow for a better understanding and monitoring of suspicious flows of capital, and tender requests and answers. There is also a generalised perception that the cyber security mechanisms that support the available digital tools for company law operations allow for reduced risks of digital identity theft.

In Belgium, there is a generalised perception among the interviewed stakeholders of an underlying risk regarding document fraud, and in particular, the upload of fraudulent documents to the business register (e.g. fake authorisations, fake diplomas). The use of electronic signatures for authentication purposes is also perceived as being risky and prone to fraudulent activity. However, because the use of digital tools for company law operations is currently relatively low in Belgium, there are no reported cases of fraud or illegal activities directly associated with the use of digital tools. In addition, other stakeholders (i.e. from the Belgian Cybercrime Centre for Research, Training and Education) have pointed out that the main issue with regard to the incidence of fraudulent / illegal activities such as tax evasion and money laundering, in the context of company registration operations, has always been the action of ‘straw men’ and ‘front people’. These stakeholders have noted that digital tools might facilitate several aspects of these activities, but that the possibility of using digital tools for registering companies in a particular country would not be the fundamental reason why individuals would seek to carry out money laundering or tax evasion activities.

Stakeholders contacted

In order to complement the preliminary data presented in the previous section, the study team has contacted the following set of stakeholders:

- Portuguese Institute for Registries and Notaries, i.e. Instituto dos Registos e do Notariado\(^223\);
- Estonian Centre of Registers and Information Systems (including the Business register), i.e. eRIK, e-äriregister\(^224\);
- Estonian Trade Union Confederation\(^225\);
- Estonian Ministry of Justice\(^226\);

\(^224\) See https://ettevotjaportaal.rik.ee/ for further information.
\(^225\) See http://www.eakl.ee/ for more information.
\(^226\) See http://www.just.ee/en for more information.
Causal link assessment

A collection of causal link propositions with regard to potential impacts of using digital tools in the context of company registration operations in Estonia, Portugal and Belgium is presented in this section. This is further complemented by the results of this causal link assessment and supporting references. In this context, the causal link propositions (i.e. in the form of but-for tests) with regard to the fraudulent / illegal activities impacts of using digital tools for company registration operations in Estonia, Portugal and Belgium are as follows:

Causal link proposition #1

**But for** the use of digital tools in (cross-border) end-to-end, direct online company registration, would the registered increase in the number of offshore company incorporations from Estonia from 4 to 66 (i.e. from 1996 to 1997) have occurred?

**But for** the registered increase in the number of offshore company incorporations from Estonia from 4 to 66 (i.e. from 1996 to 1997), is there any other cause other than the use of digital tools in cross-border direct online company registration that would lead it to occur?

Causal link proposition #2

**But for** the use of digital tools in (cross-border) end-to-end, direct online company registration, would the registered increase in the number of offshore company registrations from Estonia from the pre-1996 period to the post-1996 period have occurred?

**But for** the registered increase in the number of offshore company registrations from Estonia from the pre-1996 period to the post-1996, is there any other cause other than the use of digital tools in cross-border direct online company registration that would lead it to occur?

Judgement: as outlined in the graph in Figure 17, there was a considerable increase in the number of offshore company incorporations from Estonia from 1996 to 1997, as reported by the International Consortium of Investigative Journalists’ database. This coincides with the first set of legislative actions taken by the Estonian government to promote the digitalisation of company registration operations (i.e. eBusiness Estonia). While a numerical correlation is apparent, a causal connection between the use of digital tools for company registration operations and the incidence of fraudulent / illegal activities is not. Firstly, it is worth re-stating that the number of offshore company incorporations as reported by the International Consortium of Investigative Journalists constitutes a loose proxy-indicator for the incidence of money laundering and tax evasion; secondly, in 1997, Estonia opened a free-trade zone at Muuga harbour in order to facilitate transit trade with Russia, facilitating influx of Russian capital to Estonia. In summary, a causal link between the use of digital tools for company registration operations and the incidence of fraudulent / illegal activities in Estonia

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228 See http://www.notaire.be for more information.
229 See https://justice.belgium.be/ for more information.
could potentially exist in this instance, but a more detailed analysis with reliable tax evasion / money laundering indicator data sets is required.

Causal link proposition #3

**But for** the use of digital tools in (cross-border) end-to-end, direct online company registration, would the risk of stolen eIDs being used for registering companies in a fraudulent manner in Estonia exist?

**But for** the risk of stolen eIDs being used for registering companies in a fraudulent manner in Estonia, is there any other cause other than the use of digital tools in cross-border direct online company registration that would lead it to occur?

**Judgement:** the risk of stolen eIDs being used for registering companies in a fraudulent manner in Estonia would still exist without the availability of digital tools for company registration operations. As noted by interviewed stakeholders in other countries (e.g. Belgium), the perpetration of fraudulent / illegal activities in this context usually relies on 'front people', who de-fraud company registers regardless of the availability of digital tools. However, that the use of online portals for direct, end-to-end company registration can potentially facilitate this process.

Causal link proposition #4

**But for** the use of digital tools in (cross-border) end-to-end, direct online company registration, would the increased ability of Portuguese authorities to better monitor transactions and identify fraudulent / illegal activities (e.g. cartelised industries and unfair competition, tax evasion) have occurred?

**But** the increased ability of Portuguese authorities to better monitor transactions and identify fraudulent / illegal activities (e.g. cartelised industries and unfair competition, tax evasion), is there any other cause other than the use of digital tools in cross-border direct online company registration that would lead it to occur?

**Judgement:** the ability of Portuguese authorities to better monitor transactions and identify fraudulent / illegal activities (e.g. cartelised industries and unfair competition, tax evasion) could also exist without the use of digital tools, e.g. through the allocation of resources to monitor company registration data. However, digital tools enable these monitoring processes to be carried out with increased efficiency. The increased ability of Portuguese authorities to monitor and detect suspicious activity could also be explained by other measures of the SIMPLEX programme other than the ability to register companies through the use of direct, end-to-end digital tools, e.g. modernisation of the institute for company registries and notaries (IRN).
9.4 Appendix IV: Use-magnitude matrices ratings and rationales

As detailed in section 5.2, three use-magnitude matrices have been developed to support the prioritisation of potential Member State-company law operation-impact relationships for the causality assessment. Each matrix has been developed for a specific impact target area, plotting the extent of use of digital tools in each Member State against the magnitude of the identified or perceived impacts relevant to that target area in each Member State. This section presents the tables behind the use-magnitude matrices, which detail the ratings assigned in each instance and the rationales for the allocation of the ratings, based on the available data. Firstly, the extent of use ratings and rationales are presented before the magnitude of impact ratings and rationales are presented by impact target area.

9.4.1 Extent of use of digital tools

Table 20: Ratings allocated to each Member State-company law operation combination regarding the extent of use of digital tools.

<table>
<thead>
<tr>
<th>Member State</th>
<th>Registration</th>
<th>Filing and disclosure of company information</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE</td>
<td>Low</td>
<td>Low</td>
<td>No / Low</td>
<td>Low</td>
</tr>
<tr>
<td>BG</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>DE</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>DK</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>EE</td>
<td>High</td>
<td>High</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>FR</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>HU</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>IT</td>
<td>Moderate</td>
<td>High</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>LU</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>NL</td>
<td>Moderate</td>
<td>High</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>PL</td>
<td>Medium / High</td>
<td>Medium / High</td>
<td>Medium / High</td>
<td>No / Low</td>
</tr>
<tr>
<td>PT</td>
<td>Medium</td>
<td>High</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>RO</td>
<td>Low</td>
<td>No / Low</td>
<td>Low</td>
<td>No / Low</td>
</tr>
<tr>
<td>UK</td>
<td>High</td>
<td>High</td>
<td>No / Low</td>
<td>No / Low</td>
</tr>
</tbody>
</table>

Table 21: Rationale for the above ratings on the extent of use of digital tools for the four company law operations in each of the 14 Member States.

<table>
<thead>
<tr>
<th>Member State</th>
<th>Registration</th>
<th>Filing and disclosure of company information</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE</td>
<td>Use of digital tools possible for one type of company only and limited use reported.</td>
<td>Companies can modify limited information directly using digital tools and third parties can disclose</td>
<td>Dissolution has to be conducted in person.</td>
<td>No digital tools available to companies but digital tools used</td>
</tr>
<tr>
<td>Rationale</td>
<td>Rationale of the ratings for the extent of use of digital tools</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Member State</strong></td>
<td><strong>Registration</strong></td>
<td><strong>Filing and disclosure of company information</strong></td>
<td><strong>Dissolution</strong></td>
<td><strong>Mergers</strong></td>
</tr>
<tr>
<td><strong>BG</strong></td>
<td>Digital tools are available and are widely used for the four company law operations. However, only specialised civil officers at the Registry Agency are allowed to use these digital tools, meaning that the process is not direct or end-to-end.</td>
<td>Digital tools are available and are widely used for the four company law operations. However, only specialised civil officers at the Registry Agency are allowed to use these digital tools, meaning that the process is not direct or end-to-end.</td>
<td>Digital tools are available and are widely used for the four company law operations. However, only specialised civil officers at the Registry Agency are allowed to use these digital tools, meaning that the process is not direct or end-to-end.</td>
<td>Digital tools are available and are widely used for the four company law operations. However, only specialised civil officers at the Registry Agency are allowed to use these digital tools, meaning that the process is not direct or end-to-end.</td>
</tr>
<tr>
<td><strong>DE</strong></td>
<td>Mandatory registration through digital tools, but use by the notary.</td>
<td>Disclosure and filing of registration information and modifications to a company's details are mandatory through digital tools but by the notary. Filing of financial statements is done electronically by companies.</td>
<td>Mandatory dissolution using digital tools but by the notary.</td>
<td>Mandatory use of digital tools for mergers but by the notary.</td>
</tr>
<tr>
<td><strong>DK</strong></td>
<td>No quantitative data on the extent of use is available. However, the only existing solutions to carry out the four company law operations are digital, direct and end-to-end. It has been reported by the Danish Business Authority that these available digital tools are widely used.</td>
<td>No quantitative data on the extent of use is available. However, the only existing solutions to carry out the four company law operations are digital, direct and end-to-end. It has been reported by the Danish Business Authority that these available digital tools are widely used.</td>
<td>No quantitative data on the extent of use is available. However, the only existing solutions to carry out the four company law operations are digital, direct and end-to-end. It has been reported by the Danish Business Authority that these available digital tools are widely used.</td>
<td>No quantitative data on the extent of use is available. However, the only existing solutions to carry out the four company law operations are digital, direct and end-to-end. It has been reported by the Danish Business Authority that these available digital tools are widely used.</td>
</tr>
<tr>
<td><strong>EE</strong></td>
<td>Direct, end-to-end registration was conducted by 99.99% of registering companies in 2016, rising from 92% in 2010 (national only).</td>
<td>Direct, end-to-end filing and disclosure conducted by 100% of companies since 2010 (national only).</td>
<td>Direct, end-to-end is possible, although no data on extent of use.</td>
<td>Requires notary but application for changing data has been done online for more than 80% of mergers since 2011.</td>
</tr>
<tr>
<td><strong>FR</strong></td>
<td>Possibilities for the use of digital tools exist but clarification is needed.</td>
<td>Company information may be disclosed online, although limited insight into extent of use.</td>
<td>Possibilities for the use of digital tools exist but clarification is needed.</td>
<td>Digital provision of forms but required delivery in hard copy.</td>
</tr>
<tr>
<td><strong>HU</strong></td>
<td>All stages can be conducted online but no insight into extent of use. Need confirmation on whether the</td>
<td>All stages can be conducted online but no insight into extent of use. Need confirmation on whether the</td>
<td>All stages can be conducted online but no insight into extent of use. Need confirmation on whether the</td>
<td>All stages can be conducted online but no insight into extent of use. Need confirmation on whether the</td>
</tr>
<tr>
<td>Member State</td>
<td>Registration</td>
<td>Filing and disclosure of company information</td>
<td>Dissolution</td>
<td>Mergers</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------</td>
<td>---------------------------------------------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>IT</strong></td>
<td><strong>Company establishment</strong>: only for 'innovative start-ups' is digital establishment possible. <strong>Company registration</strong>: it is possible end-to-end online.</td>
<td>A digital tool exists for filing and disclosure but limited understanding of extent of use or if other options are available.</td>
<td>Digital tool is used for all steps of dissolution.</td>
<td>Involvement of a notary is required in all cases, although merger documents may be filed online.</td>
</tr>
<tr>
<td><strong>LU</strong></td>
<td>Requirement to use a notary before submission of documentation electronically.</td>
<td>All elements should be filed online using digital tools.</td>
<td>Some elements of dissolution are to be provided for digitally. However, the intervention of a notary is required.</td>
<td>Some aspects of mergers can be carried out electronically (e.g. filing of information with the RCS), but intervention of a notary and a lawyer is required.</td>
</tr>
<tr>
<td><strong>NL</strong></td>
<td>Required physical meeting between company and member of the registry. However, notaries can submit registration online.</td>
<td>Filing and disclosure happens through digital means, although no insight on extent of use or whether it is mandatory.</td>
<td>Required dissolution by paper application only. However, notaries can submit for dissolution online.</td>
<td>Registration of mergers by the companies involved cannot happen online. Only notaries can submit online.</td>
</tr>
<tr>
<td><strong>PL</strong></td>
<td>Direct, end-to-end online company registration is available; however, limited information on extent of use.</td>
<td>Digital tools are available for the filing and disclosure of information; however, limited information on extent of use.</td>
<td>As for registration, tools are available for dissolution; however, limited information on extent of use.</td>
<td>Polish law does not foresee the possibility to carry out merger and acquisitions of companies in a digital manner.</td>
</tr>
<tr>
<td><strong>PT</strong></td>
<td>Direct, end-to-end company registration available for the registration of most companies. However, only used by ~38% in 2013-2016 primarily due to the ease and popularity of the 'one-stop shop' physical mechanism.</td>
<td>Since 2006, online publication of company information has been mandatory for all companies.</td>
<td>Dissolution must be done in person but application for registration by transcription of dissolution can be detailed digitally.</td>
<td>Digital tools are available for the direct, end-to-end completion of a merger. Intensive usage of these tools is reported.</td>
</tr>
<tr>
<td><strong>RO</strong></td>
<td>Publication of registration in national gazette is partially possible via digital tools. Otherwise, no use of digital tools is possible.</td>
<td>Use of a notary or lawyer is mandatory.</td>
<td>Most commonly require a notary/lawyer to be present. Digital tools for filing information related to dissolution is possible but low use considered due to complexity.</td>
<td>Use of a notary or lawyer is mandatory.</td>
</tr>
<tr>
<td><strong>UK</strong></td>
<td>Only private limited companies are able to use digital tools for registration (~99% did in 2014 and 2015).</td>
<td>Six of 11 document types that are required to be filed and disclosed are not possible digitally. The proportion of total documents</td>
<td>Dissolution cannot be filed electronically.</td>
<td>Merger documents are submitted on paper.</td>
</tr>
</tbody>
</table>
Rationale of the ratings for the extent of use of digital tools

<table>
<thead>
<tr>
<th>Member State</th>
<th>Registration</th>
<th>Filing and disclosure of company information</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated as high given that most companies registered in the UK are private limited companies.</td>
<td>filed electronically was 84% in 2015 and 82% in 2014.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9.4.2 Magnitude of impacts per target area

This sub-section presents three sets of tables, one for each impact target area. Firstly, the rating and rationale tables for the socio-economic impact target area are presented before the rating and rationale tables are presented for the legal certainty and fraudulent / illegal activity target areas. As can be seen, the direction of the identified impacts (i.e. positive, neutral, negative) have been indicated in the table but have not been incorporated in the analysis presented in section 5.2. This is due to the need to clarify these findings and determine a mechanism for presenting them appropriately.

Table 22: Ratings allocated to each Member State-company law operation combination regarding the magnitude of impacts in the socio-economic impact target area.

<table>
<thead>
<tr>
<th>Ratings</th>
<th>Registration</th>
<th>Filing and disclosure of company information</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
</tr>
<tr>
<td>BG</td>
<td>Moderate positive</td>
<td>Moderate positive</td>
<td>Moderate positive</td>
<td>Moderate positive</td>
</tr>
<tr>
<td>DE</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
</tr>
<tr>
<td>DK</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
</tr>
<tr>
<td>EE</td>
<td>High positive and negative</td>
<td>High positive and negative</td>
<td>High positive and negative</td>
<td>No / Low neutral</td>
</tr>
<tr>
<td>FR</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
</tr>
<tr>
<td>HU</td>
<td>Moderate positive and negative</td>
<td>Moderate positive and negative</td>
<td>Moderate positive and negative</td>
<td>Moderate positive and negative</td>
</tr>
<tr>
<td>IT</td>
<td>Moderate positive</td>
<td>Moderate positive</td>
<td>Moderate positive</td>
<td>No / Low neutral</td>
</tr>
<tr>
<td>LU</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
</tr>
<tr>
<td>NL</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
</tr>
<tr>
<td>PL</td>
<td>Moderate positive</td>
<td>Low positive</td>
<td>Moderate positive</td>
<td>Low positive</td>
</tr>
<tr>
<td>PT</td>
<td>High positive</td>
<td>High positive</td>
<td>High positive</td>
<td>High positive</td>
</tr>
<tr>
<td>RO</td>
<td>No impact</td>
<td>No impact</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>UK</td>
<td>Moderate positive</td>
<td>Moderate positive</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
</tr>
</tbody>
</table>
Table 23: Rationale for the above ratings on the magnitude of impacts on the socio-economic target area for the four company law operations in each of the 14 Member States.

<table>
<thead>
<tr>
<th>Member State</th>
<th>Rationale</th>
<th>Registration</th>
<th>Filing and disclosure of company information</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE</td>
<td>Interviewed stakeholders specifically stated that the only impacts of using digital tools for registration and filing / sharing of company information are related to operational efficiency rather than socio-economic impacts.</td>
<td>Interviewed stakeholders specifically stated that the only impacts of using digital tools for registration and filing / sharing of company information are related to operational efficiency rather than socio-economic impacts.</td>
<td>There are no available digital or online tools for dissolution or mergers that can bypass the requirement of appearing in-person at a notary.</td>
<td>There are no available digital or online tools for dissolution or mergers that can bypass the requirement of appearing in-person at a notary.</td>
<td></td>
</tr>
<tr>
<td>BG</td>
<td>No relevant quantitative data was found. However, the qualitative data obtained throughout the national-level research exercise revealed that the impact of digitalisation of company law operations is perceived as positive. This is mostly due to increases in business competitiveness, mobility and efficiency, increased social protection, and employee rights to information.</td>
<td>No relevant quantitative data was found. However, the qualitative data obtained throughout the national-level research exercise revealed that the impact of digitalisation of company law operations is perceived as positive. This is mostly due to increases in business competitiveness, mobility and efficiency, increased social protection, and employee rights to information.</td>
<td>No relevant quantitative data was found. However, the qualitative data obtained throughout the national-level research exercise revealed that the impact of digitalisation of company law operations is perceived as positive. This is mostly due to increases in business competitiveness, mobility and efficiency, increased social protection, and employee rights to information.</td>
<td>No relevant quantitative data was found. However, the qualitative data obtained throughout the national-level research exercise revealed that the impact of digitalisation of company law operations is perceived as positive. This is mostly due to increases in business competitiveness, mobility and efficiency, increased social protection, and employee rights to information.</td>
<td></td>
</tr>
<tr>
<td>DE</td>
<td>Available digital tools are not end-to-end and require notary intervention. Impact indicators did not reveal trend-like socio-economic impacts.</td>
<td>Available digital tools are not end-to-end and require notary intervention. Impact indicators did not reveal trend-like socio-economic impacts.</td>
<td>Available digital tools are not end-to-end and require notary intervention. Impact indicators did not reveal trend-like socio-economic impacts.</td>
<td>Digital tools are not used for most merger operations.</td>
<td></td>
</tr>
<tr>
<td>DK</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>Interviewed stakeholders reported that the use of the available end-to-end online tools has potentially had a positive impact on the country’s economy and labour market. However, it was also stated that the end-to-end nature of these tools leads to situations where employers do not pay salaries to employees and proceed.</td>
<td>Interviewed stakeholders reported that the use of the available end-to-end online tools has potentially had a positive impact on the country’s economy and labour market. However, it was also stated that the end-to-end nature of these tools leads to situations where employers do not pay salaries to employees and proceed.</td>
<td>Interviewed stakeholders reported that the use of the available end-to-end online tools has potentially had a positive impact on the country’s economy and labour market. However, it was also stated that the end-to-end nature of these tools leads to situations where employers do not pay salaries to employees and proceed.</td>
<td>Digital tools are not used for most merger operations.</td>
<td></td>
</tr>
</tbody>
</table>
### Rationale of the ratings for the magnitude of impact – Socio-economic impacts target area

<table>
<thead>
<tr>
<th>Member State</th>
<th>Registration</th>
<th>Filing and disclosure of company information</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FR</strong></td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
</tr>
<tr>
<td><strong>HU</strong></td>
<td>Available digital tools are not end-to-end and require notary intervention. Interviewed stakeholders stated that relevant positive impacts of using the available digital tools are related to operational efficiency, and improved working conditions. Negative social impacts were also pointed out, such as the automation of administrative tasks, which is hypothesised to have an impact on level of employment.</td>
<td>Available digital tools are not end-to-end and require notary intervention. Interviewed stakeholders stated that relevant positive impacts of using the available digital tools are related to operational efficiency, and improved working conditions. Negative social impacts were also pointed out, such as the automation of administrative tasks, which is hypothesised to have an impact on level of employment.</td>
<td>Available digital tools are not end-to-end and require notary intervention. Interviewed stakeholders stated that relevant positive impacts of using the available digital tools are related to operational efficiency, and improved working conditions. Negative social impacts were also pointed out, such as the automation of administrative tasks, which is hypothesised to have an impact on level of employment.</td>
<td>Available digital tools are not end-to-end and require notary intervention. Interviewed stakeholders stated that relevant positive impacts of using the available digital tools are related to operational efficiency, and improved working conditions. Negative social impacts were also pointed out, such as the automation of administrative tasks, which is hypothesised to have an impact on level of employment.</td>
</tr>
<tr>
<td><strong>IT</strong></td>
<td>Available digital tools are not end-to-end. However, stakeholders have reported that the current online tools allow the relevant authorities to detect dormant companies more effectively, increase the overall access to company information, and have a positive effect on the labour market.</td>
<td>Available digital tools are not end-to-end. However, stakeholders have reported that the current online tools allow the relevant authorities to detect dormant companies more effectively, increase the overall access to company information, and have a positive effect on the labour market.</td>
<td>Available digital tools are not end-to-end. However, stakeholders have reported that the current online tools allow the relevant authorities to detect dormant companies more effectively, increase the overall access to company information, and have a positive effect on the labour market.</td>
<td>Digital tools are not used for most merger operations.</td>
</tr>
<tr>
<td><strong>LU</strong></td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
</tr>
<tr>
<td><strong>NL</strong></td>
<td>Available digital tools are not end-to-end and require notary intervention. Impact indicators did not reveal trend-like socio-economic impacts.</td>
<td>Available digital tools are not end-to-end and require notary intervention. Impact indicators did not reveal trend-like socio-economic impacts.</td>
<td>Available digital tools are not end-to-end and require notary intervention. Impact indicators did not reveal trend-like socio-economic impacts.</td>
<td>Digital tools are not used for most merger operations.</td>
</tr>
<tr>
<td><strong>PL</strong></td>
<td>The impact magnitude rankings were provided directly by interviewed stakeholders, namely Polish law experts (i.e. Crido Legal).</td>
<td>The impact magnitude rankings were provided directly by interviewed stakeholders, namely Polish law experts (i.e. Crido Legal).</td>
<td>The impact magnitude rankings were provided directly by interviewed stakeholders, namely Polish law experts (i.e. Crido Legal).</td>
<td>The impact magnitude rankings were provided directly by interviewed stakeholders, namely Polish law experts (i.e. Crido Legal).</td>
</tr>
</tbody>
</table>
### Rationale of the ratings for the magnitude of impact – Socio-economic impacts target area

<table>
<thead>
<tr>
<th>Member State</th>
<th>Registration</th>
<th>Filing and disclosure of company information</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PT</strong></td>
<td>Interviewed stakeholders reported that the impacts of using the widely available digital tools were positive across all operations, particularly for the country's economy and labour market.</td>
<td>Interviewed stakeholders reported that the impacts of using digital tools were positive across all operations, particularly for the country's economy and labour market.</td>
<td>Interviewed stakeholders reported that the impacts of using digital tools were positive across all operations, particularly for the country's economy and labour market.</td>
<td>Interviewed stakeholders reported that the impacts of using digital tools were positive across all operations, particularly for the country's economy and labour market.</td>
</tr>
<tr>
<td><strong>RO</strong></td>
<td>The level of availability and use of digital tools for company law operations in Romania is low, and the intermediation of a lawyer or notary is required for most processes. Legislation is currently being evaluated to allow for greater flexibility in this context. Thus, no impacts can realistically be attributed to the use of digital tools in company law operations.</td>
<td>The level of availability and use of digital tools for company law operations in Romania is low, and the intermediation of a lawyer or notary is required for most processes. Legislation is currently being evaluated to allow for greater flexibility in this context. Thus, no impacts can realistically be attributed to the use of digital tools in company law operations.</td>
<td>The level of availability and use of digital tools for company law operations in Romania is low, and the intermediation of a lawyer or notary is required for most processes. Legislation is currently being evaluated to allow for greater flexibility in this context. Thus, no impacts can realistically be attributed to the use of digital tools in company law operations.</td>
<td>The level of availability and use of digital tools for company law operations in Romania is low, and the intermediation of a lawyer or notary is required for most processes. Legislation is currently being evaluated to allow for greater flexibility in this context. Thus, no impacts can realistically be attributed to the use of digital tools in company law operations.</td>
</tr>
<tr>
<td><strong>UK</strong></td>
<td>It has been suggested by the interviewed stakeholders that the use of available digital tools contributes to an increase in the number of self-employed persons, as well as operational efficiency. Additionally, the retrieved impact indicators revealed a considerable increase in the number of dormant companies operating in the UK.</td>
<td>It has been suggested by the interviewed stakeholders that the use of available digital tools contributes to an increase in the number of self-employed persons, as well as operational efficiency. Additionally, the retrieved impact indicators revealed a considerable increase in the number of dormant companies operating in the UK.</td>
<td>It has been suggested by the interviewed stakeholders that the use of available digital tools contributes to an increase in the number of self-employed persons, as well as operational efficiency. Additionally, the retrieved impact indicators revealed a considerable increase in the number of dormant companies operating in the UK.</td>
<td>Digital tools are not used for most merger operations.</td>
</tr>
</tbody>
</table>

Digital tools are not used for most merger operations.
Table 24: Ratings allocated to each Member State-company law operation combination regarding the magnitude of impacts in the legal certainty impact target area.

<table>
<thead>
<tr>
<th>Member State</th>
<th>Registration</th>
<th>Filing and disclosure of company information</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
</tr>
<tr>
<td>BG</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
</tr>
<tr>
<td>DE</td>
<td>Low positive</td>
<td>Low positive</td>
<td>Low positive</td>
<td>Low positive</td>
</tr>
<tr>
<td>DK</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
</tr>
<tr>
<td>EE</td>
<td>Moderate positive</td>
<td>Moderate positive</td>
<td>Moderate positive</td>
<td>No impact</td>
</tr>
<tr>
<td>FR</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
</tr>
<tr>
<td>HU</td>
<td>Low positive and negative</td>
<td>Low positive and negative</td>
<td>Low positive and negative</td>
<td>Low positive and negative</td>
</tr>
<tr>
<td>IT</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>Moderate neutral</td>
</tr>
<tr>
<td>LU</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
</tr>
<tr>
<td>NL</td>
<td>Low positive</td>
<td>Low positive</td>
<td>Low positive</td>
<td>Low positive</td>
</tr>
<tr>
<td>PL</td>
<td>Low positive</td>
<td>High positive</td>
<td>No impact</td>
<td>Low positive</td>
</tr>
<tr>
<td>PT</td>
<td>Moderate positive</td>
<td>Moderate positive</td>
<td>Moderate positive</td>
<td>Moderate positive</td>
</tr>
<tr>
<td>RO</td>
<td>No impact</td>
<td>No impact</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>UK</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
</tr>
</tbody>
</table>

Table 25: Rationale for the above ratings on the magnitude of impacts on the legal certainty target area for the four company law operations in each of the 14 Member States.

<table>
<thead>
<tr>
<th>Member State</th>
<th>Registration</th>
<th>Filing and disclosure of company information</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE</td>
<td>No potential impacts were identified by interviewed stakeholders, and no litigation cases where legal certainty has been challenged were found.</td>
<td>No potential impacts were identified by interviewed stakeholders, and no litigation cases where legal certainty has been challenged were found.</td>
<td>No potential impacts were identified by interviewed stakeholders, and no litigation cases where legal certainty has been challenged were found.</td>
<td>No potential impacts were identified by interviewed stakeholders, and no litigation cases where legal certainty has been challenged were found.</td>
</tr>
<tr>
<td>BG</td>
<td>The Registry Agency conducts regular checks to the validity of data provided in the context of company law operations. No potential impacts were identified by interviewed stakeholders, and no litigation cases where legal certainty has been challenged were found.</td>
<td>The Registry Agency conducts regular checks to the validity of data provided in the context of company law operations. No potential impacts were identified by interviewed stakeholders, and no litigation cases where legal certainty has been challenged were found.</td>
<td>The Registry Agency conducts regular checks to the validity of data provided in the context of company law operations. No potential impacts were identified by interviewed stakeholders, and no litigation cases where legal certainty has been challenged were found.</td>
<td>The Registry Agency conducts regular checks to the validity of data provided in the context of company law operations. No potential impacts were identified by interviewed stakeholders, and no litigation cases where legal certainty has been challenged were found.</td>
</tr>
</tbody>
</table>
### Rationale

#### Rationale of the ratings for the magnitude of impact – Legal certainty target area

<table>
<thead>
<tr>
<th>Member State</th>
<th>Registration</th>
<th>Filing and disclosure of company information</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DE</strong></td>
<td>Interviewed stakeholders pointed out that the main enforcer of legal certainty in the processes underlying each company law operation is the action of notaries. However, it was also noted that the current digital tools used by notaries result in a positive impact directly related to increased transparency of information.</td>
<td>Interviewed stakeholders pointed out that the main enforcer of legal certainty in the processes underlying each company law operation is the action of notaries. However, it was also noted that the current digital tools used by notaries result in a positive impact directly related to increased transparency of information.</td>
<td>Interviewed stakeholders pointed out that the main enforcer of legal certainty in the processes underlying each company law operation is the action of notaries. However, it was also noted that the current digital tools used by notaries result in a positive impact directly related to increased transparency of information.</td>
<td>Interviewed stakeholders pointed out that the main enforcer of legal certainty in the processes underlying each company law operation is the action of notaries. However, it was also noted that the current digital tools used by notaries result in a positive impact directly related to increased transparency of information.</td>
</tr>
<tr>
<td><strong>DK</strong></td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
</tr>
<tr>
<td><strong>EE</strong></td>
<td>The use of digital tools across the four operations has an overall positive impact on legal certainty, as the Estonian Chamber of Commerce and Industry reported, i.e. data in the Commercial Register is widely consulted and relied upon.</td>
<td>The use of digital tools across the four operations has an overall positive impact on legal certainty, as the Estonian Chamber of Commerce and Industry reported, i.e. data in the Commercial Register is widely consulted and relied upon.</td>
<td>The use of digital tools across the four operations has an overall positive impact on legal certainty, as the Estonian Chamber of Commerce and Industry reported, i.e. data in the Commercial Register is widely consulted and relied upon.</td>
<td>Digital tools are not used for most merger operations.</td>
</tr>
<tr>
<td><strong>FR</strong></td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
</tr>
<tr>
<td><strong>HU</strong></td>
<td>Quantitative data retrieved throughout the national-level research exercise revealed that there is an increasing trend with regard to the number of litigation cases where legal certainty has been challenged. However, interviewed stakeholders have also pointed out that the use of digital tools increases transparency, raising and enforcing legal certainty in the context of the four company law operations.</td>
<td>Quantitative data retrieved throughout the national-level research exercise revealed that there is an increasing trend with regard to the number of litigation cases where legal certainty has been challenged. However, interviewed stakeholders have also pointed out that the use of digital tools increases transparency, raising and enforcing legal certainty in the context of the four company law operations.</td>
<td>Quantitative data retrieved throughout the national-level research exercise revealed that there is an increasing trend with regard to the number of litigation cases where legal certainty has been challenged. However, interviewed stakeholders have also pointed out that the use of digital tools increases transparency, raising and enforcing legal certainty in the context of the four company law operations.</td>
<td>Quantitative data retrieved throughout the national-level research exercise revealed that there is an increasing trend with regard to the number of litigation cases where legal certainty has been challenged. However, interviewed stakeholders have also pointed out that the use of digital tools increases transparency, raising and enforcing legal certainty in the context of the four company law operations.</td>
</tr>
<tr>
<td>Member State</td>
<td>Registration</td>
<td>Filing and disclosure of company information</td>
<td>Dissolution</td>
<td>Mergers</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------</td>
<td>---------------------------------------------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>IT</td>
<td>No potential impacts were identified.</td>
<td>No potential impacts were identified.</td>
<td>No potential impacts were identified.</td>
<td>Interviewed stakeholders have identified a moderate impact due to the data requirements enforced by Directive 2005/56/EC.</td>
</tr>
<tr>
<td>LU</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
</tr>
<tr>
<td>NL</td>
<td>Interviewed stakeholders pointed out that the main enforcer of legal certainty in the processes underlying each company law operation is the action of notaries. However, it was also noted that the current digital tools used by notaries result in a positive impact directly related to increased transparency of information.</td>
<td>Interviewed stakeholders pointed out that the main enforcer of legal certainty in the processes underlying each company law operation is the action of notaries. However, it was also noted that the current digital tools used by notaries result in a positive impact directly related to increased transparency of information.</td>
<td>Interviewed stakeholders pointed out that the main enforcer of legal certainty in the processes underlying each company law operation is the action of notaries. However, it was also noted that the current digital tools used by notaries result in a positive impact directly related to increased transparency of information.</td>
<td>Interviewed stakeholders pointed out that the main enforcer of legal certainty in the processes underlying each company law operation is the action of notaries. However, it was also noted that the current digital tools used by notaries result in a positive impact directly related to increased transparency of information.</td>
</tr>
<tr>
<td>PL</td>
<td>The impact magnitude rankings were provided directly by interviewed stakeholders, namely Polish law experts (i.e. Crido Legal).</td>
<td>The impact magnitude rankings were provided directly by interviewed stakeholders, namely Polish law experts (i.e. Crido Legal).</td>
<td>The impact magnitude rankings were provided directly by interviewed stakeholders, namely Polish law experts (i.e. Crido Legal).</td>
<td>The impact magnitude rankings were provided directly by interviewed stakeholders, namely Polish law experts (i.e. Crido Legal).</td>
</tr>
<tr>
<td>PT</td>
<td>A moderate positive impact was identified by interviewed stakeholders: the use of digital tools contributes to enforcement of knowledge on applicable rules with regard to data requirements and reduces dependence on third parties. Additionally, the current authentication methods reinforce this positive impact of digital tools on legal certainty. Another aspect pointed out by interviewed stakeholders was that carrying out the four operations with use of digital tools allows for a semi-automatic reporting of abnormal situations.</td>
<td>A moderate positive impact was identified by interviewed stakeholders: the use of digital tools contributes to enforcement of knowledge on applicable rules with regard to data requirements and reduces dependence on third parties. Additionally, the current authentication methods reinforce this positive impact of digital tools on legal certainty. Another aspect pointed out by interviewed stakeholders was that carrying out the four operations with use of digital tools allows for a semi-automatic reporting of abnormal situations.</td>
<td>A moderate positive impact was identified by interviewed stakeholders: the use of digital tools contributes to enforcement of knowledge on applicable rules with regard to data requirements and reduces dependence on third parties. Additionally, the current authentication methods reinforce this positive impact of digital tools on legal certainty. Another aspect pointed out by interviewed stakeholders was that carrying out the four operations with use of digital tools allows for a semi-automatic reporting of abnormal situations.</td>
<td>A moderate positive impact was identified by interviewed stakeholders: the use of digital tools contributes to enforcement of knowledge on applicable rules with regard to data requirements and reduces dependence on third parties. Additionally, the current authentication methods reinforce this positive impact of digital tools on legal certainty. Another aspect pointed out by interviewed stakeholders was that carrying out the four operations with use of digital tools allows for a semi-automatic reporting of abnormal situations.</td>
</tr>
</tbody>
</table>
Assessment of the impacts of using digital tools in the context of cross-border company operations – Final Report

Table 26: Ratings allocated to each Member State–company law operation combination regarding the magnitude of impacts in the fraudulent / illegal activities impact target area.

<table>
<thead>
<tr>
<th>Member State</th>
<th>Registration</th>
<th>Filing and disclosure of company information</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
</tr>
<tr>
<td>BG</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
</tr>
<tr>
<td>DE</td>
<td>Low positive</td>
<td>Low positive</td>
<td>Low positive</td>
<td>Low positive</td>
</tr>
<tr>
<td>DK</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
</tr>
<tr>
<td>EE</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
</tr>
<tr>
<td>FR</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
</tr>
</tbody>
</table>

Rationale of the ratings for the magnitude of impact – Legal certainty target area

<table>
<thead>
<tr>
<th>Member State</th>
<th>Registration</th>
<th>Filing and disclosure of company information</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>RO</td>
<td>automatic reporting of abnormal situations.</td>
<td>The level of availability and use of digital tools for company law operations in Romania is low, and the intermediation of a lawyer or notary is required for most processes. Legislation is currently being evaluated to allow for greater flexibility in this context. No impacts can realistically be attributed to the use of digital tools in company law operations.</td>
<td>The level of availability and use of digital tools for company law operations in Romania is low, and the intermediation of a lawyer or notary is required for most processes. Legislation is currently being evaluated to allow for greater flexibility in this context. No impacts can realistically be attributed to the use of digital tools in company law operations.</td>
<td>Digital tools are not used for most merger operations.</td>
</tr>
<tr>
<td>UK</td>
<td>According to interviewed stakeholders, there is appropriate legislation underlying the authentication and validity of digital tools when applied to company law operations. Additionally, an increasing trend on the UK’s corruption index was retrieved.</td>
<td>According to interviewed stakeholders, there is appropriate legislation underlying the authentication and validity of digital tools when applied to company law operations. Additionally, an increasing trend on the UK’s corruption index was retrieved.</td>
<td>According to interviewed stakeholders, there is appropriate legislation underlying the authentication and validity of digital tools when applied to company law operations. Additionally, an increasing trend on the UK’s corruption index was retrieved.</td>
<td>According to interviewed stakeholders, there is appropriate legislation underlying the authentication and validity of digital tools when applied to company law operations. Additionally, an increasing trend on the UK’s corruption index was retrieved.</td>
</tr>
</tbody>
</table>

Table 26: Ratings allocated to each Member State–company law operation combination regarding the magnitude of impacts in the fraudulent / illegal activities impact target area.
### Table 27: Rationale for the above ratings on the magnitude of impacts on the fraudulent / illegal activities target area for the four company law operations in each of the 14 Member States.

<table>
<thead>
<tr>
<th>Member State</th>
<th>Registration</th>
<th>Filing and disclosure of company information</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>HU</td>
<td>Low positive and negative</td>
<td>Low positive and negative</td>
<td>Low positive and negative</td>
<td>Low positive and negative</td>
</tr>
<tr>
<td>IT</td>
<td>Low positive</td>
<td>Moderate positive</td>
<td>Low positive</td>
<td>Moderate positive</td>
</tr>
<tr>
<td>LU</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
</tr>
<tr>
<td>NL</td>
<td>Low positive</td>
<td>Low positive</td>
<td>Low positive</td>
<td>Low positive</td>
</tr>
<tr>
<td>PL</td>
<td>Low positive</td>
<td>Low positive</td>
<td>Low positive</td>
<td>No / Low neutral</td>
</tr>
<tr>
<td>PT</td>
<td>Moderate positive</td>
<td>High positive</td>
<td>No / Low neutral</td>
<td>High positive</td>
</tr>
<tr>
<td>RO</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
<td>No impacts were found</td>
</tr>
<tr>
<td>UK</td>
<td>Moderate positive</td>
<td>Moderate positive</td>
<td>No / Low neutral</td>
<td>No / Low neutral</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Member State</th>
<th>Registration</th>
<th>Filing and disclosure of company information</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>BE</td>
<td>Given the important role of third parties in BE, some stakeholders (i.e. the notaries themselves) considered that bypassing these safeguards constitutes a risk.</td>
<td>Given the important role of third parties in BE, some stakeholders (i.e. the notaries themselves) considered that bypassing these safeguards constitutes a risk; As this does not happen, this cannot be rated.</td>
<td>Given the important role of third parties in BE, some stakeholders (i.e. the notaries themselves) considered that bypassing these safeguards constitutes a risk.</td>
<td>Given the important role of third parties in BE, some stakeholders (i.e. the notaries themselves) considered that bypassing these safeguards constitutes a risk.</td>
</tr>
<tr>
<td>BG</td>
<td>Information retrieved from interviewed stakeholders, the Registry Agency, and the Ministry of Justice, point to the fact that the incidence of corporate crimes and fraudulent activities is not related to the means through which information is provided when carrying out company law operations.</td>
<td>Information retrieved from interviewed stakeholders, the Registry Agency, and the Ministry of Justice, point to the fact that the incidence of corporate crimes and fraudulent activities is not related to the means through which information is provided when carrying out company law operations.</td>
<td>Information retrieved from interviewed stakeholders, the Registry Agency, and the Ministry of Justice, point to the fact that the incidence of corporate crimes and fraudulent activities is not related to the means through which information is provided when carrying out company law operations.</td>
<td>Information retrieved from interviewed stakeholders, the Registry Agency, and the Ministry of Justice, point to the fact that the incidence of corporate crimes and fraudulent activities is not related to the means through which information is provided when carrying out company law operations.</td>
</tr>
<tr>
<td>DE</td>
<td>Germany has seen slight reductions in the size of the shadow economy as a % of GDP since 2010 – from 13.9% to 12.2%. However, the proportion of Germany has seen slight reductions in the size of the shadow economy as a % of GDP since 2010 – from 13.9% to 12.2%. However, the proportion of Germany has seen slight reductions in the size of the shadow economy as a % of GDP since 2010 – from 13.9% to 12.2%. However, the proportion of Germany has seen slight reductions in the size of the shadow economy as a % of GDP since 2010 – from 13.9% to 12.2%. However, the proportion of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rationale</td>
<td>Rationale of the ratings for the magnitude of impact – Fraudulent / illegal activities target area</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>------------------------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Member State</strong></td>
<td><strong>Registration</strong></td>
<td><strong>Filing and disclosure of company information</strong></td>
<td><strong>Dissolution</strong></td>
<td><strong>Mergers</strong></td>
</tr>
<tr>
<td><strong>DK</strong></td>
<td>cash-based transactions has remained stable (~53%) and no qualitative perceptions have been reported yet; this represents a minor positive impact.</td>
<td>cash-based transactions has remained stable (~53%) and no qualitative perceptions have been reported yet; this represents a minor positive impact.</td>
<td>cash-based transactions has remained stable (~53%) and no qualitative perceptions have been reported yet; this represents a minor positive impact.</td>
<td>cash-based transactions has remained stable (~53%) and no qualitative perceptions have been reported yet; this represents a minor positive impact.</td>
</tr>
<tr>
<td><strong>EE</strong></td>
<td>Limited quantitative data available. Qualitative stakeholder perceptions state that the level of fraudulent activity has remained at a similar level but highlighted certain risks.</td>
<td>Limited quantitative data available. Qualitative stakeholder perceptions state that the level of fraudulent activity has remained at a similar level but highlighted certain risks.</td>
<td>Limited quantitative data available. Qualitative stakeholder perceptions state that the level of fraudulent activity has remained at a similar level but highlighted certain risks.</td>
<td>Limited quantitative data available. Qualitative stakeholder perceptions state that the level of fraudulent activity has remained at a similar level but highlighted certain risks.</td>
</tr>
<tr>
<td><strong>FR</strong></td>
<td>Interviewed stakeholders noted that using digital tools in the context of the four company law operations has helped law enforcement agencies to detect any wrongdoing. However, it was also pointed out that digital platforms allow for a great amount of information to be uploaded directly to the Chamber of Commerce, and that the validity of this information cannot be ensured at a suitable pace.</td>
<td>Interviewed stakeholders noted that using digital tools in the context of the four company law operations has helped law enforcement agencies to detect any wrongdoing. However, it was also pointed out that digital platforms allow for a great amount of information to be uploaded directly to the Chamber of Commerce, and that the validity of this information cannot be ensured at a suitable pace.</td>
<td>Interviewed stakeholders noted that using digital tools in the context of the four company law operations has helped law enforcement agencies to detect any wrongdoing. However, it was also pointed out that digital platforms allow for a great amount of information to be uploaded directly to the Chamber of Commerce, and that the validity of this information cannot be ensured at a suitable pace.</td>
<td>Interviewed stakeholders noted that using digital tools in the context of the four company law operations has helped law enforcement agencies to detect any wrongdoing. However, it was also pointed out that digital platforms allow for a great amount of information to be uploaded directly to the Chamber of Commerce, and that the validity of this information cannot be ensured at a suitable pace.</td>
</tr>
<tr>
<td><strong>HU</strong></td>
<td>Mixed quantitative data has been reported related to fraudulent / illegal activities in Italy. However, qualitative stakeholder perceptions report a positive impact due to interconnectedness and use of digital signatures.</td>
<td>Mixed quantitative data has been reported related to fraudulent / illegal activities in Italy. However, qualitative stakeholder perceptions report a positive impact due to interconnectedness and use of digital signatures.</td>
<td>Mixed quantitative data has been reported related to fraudulent / illegal activities in Italy. However, qualitative stakeholder perceptions report a positive impact due to interconnectedness and use of digital signatures.</td>
<td>Mixed quantitative data has been reported related to fraudulent / illegal activities in Italy. However, qualitative stakeholder perceptions report a positive impact due to interconnectedness and use of digital signatures.</td>
</tr>
<tr>
<td><strong>IT</strong></td>
<td>Only quantitative data received so far – it shows small decreases in proxies related to fraudulent / illegal activities (e.g. size of the proxy).</td>
<td>Only quantitative data received so far – it shows small decreases in proxies related to fraudulent / illegal activities (e.g. size of the proxy).</td>
<td>Only quantitative data received so far – it shows small decreases in proxies related to fraudulent / illegal activities (e.g. size of the proxy).</td>
<td>Only quantitative data received so far – it shows small decreases in proxies related to fraudulent / illegal activities (e.g. size of the proxy).</td>
</tr>
</tbody>
</table>
## Rationale of the ratings for the magnitude of impact – Fraudulent / illegal activities target area

<table>
<thead>
<tr>
<th>Member State</th>
<th>Registration</th>
<th>Filing and disclosure of company information</th>
<th>Dissolution</th>
<th>Mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PL</strong></td>
<td>shadow economy and proportion of the economy transacted through cash-based payments).</td>
<td>shadow economy and proportion of the economy transacted through cash-based payments).</td>
<td>shadow economy and proportion of the economy transacted through cash-based payments).</td>
<td>shadow economy and proportion of the economy transacted through cash-based payments).</td>
</tr>
<tr>
<td></td>
<td>The impact magnitude rankings were provided directly by interviewed stakeholders, namely Polish law experts (i.e. Crido Legal).</td>
<td>The impact magnitude rankings were provided directly by interviewed stakeholders, namely Polish law experts (i.e. Crido Legal).</td>
<td>The impact magnitude rankings were provided directly by interviewed stakeholders, namely Polish law experts (i.e. Crido Legal).</td>
<td>The impact magnitude rankings were provided directly by interviewed stakeholders, namely Polish law experts (i.e. Crido Legal).</td>
</tr>
<tr>
<td><strong>PT</strong></td>
<td>No quantitative data available yet. Qualitative stakeholder perceptions state that digital tools have a significant, positive impact on fraudulent / illegal activities.</td>
<td>No quantitative data available yet. Qualitative stakeholder perceptions state that digital tools have a significant, positive impact on fraudulent / illegal activities.</td>
<td>Limited possibility for using digital tools for company dissolution.</td>
<td>No quantitative data available yet. Qualitative stakeholder perceptions state that digital tools have a significant, positive impact on fraudulent / illegal activities.</td>
</tr>
<tr>
<td><strong>RO</strong></td>
<td>The level of availability and use of digital tools for company law operations in Romania is low, and the intermediation of a lawyer or notary is required for most processes. Legislation is currently being evaluated to allow for greater flexibility in this context. No impacts can realistically be attributed to the use of digital tools in company law operations.</td>
<td>The level of availability and use of digital tools for company law operations in Romania is low, and the intermediation of a lawyer or notary is required for most processes. Legislation is currently being evaluated to allow for greater flexibility in this context. No impacts can realistically be attributed to the use of digital tools in company law operations.</td>
<td>The level of availability and use of digital tools for company law operations in Romania is low, and the intermediation of a lawyer or notary is required for most processes. Legislation is currently being evaluated to allow for greater flexibility in this context. No impacts can realistically be attributed to the use of digital tools in company law operations.</td>
<td>The level of availability and use of digital tools for company law operations in Romania is low, and the intermediation of a lawyer or notary is required for most processes. Legislation is currently being evaluated to allow for greater flexibility in this context. No impacts can realistically be attributed to the use of digital tools in company law operations.</td>
</tr>
<tr>
<td><strong>UK</strong></td>
<td>Introduction of PROOF system resulted in positive impact but used by less than 50% of companies. Transparency of information online also beneficial. Quantitative data suggests proxy indicators, such as fraud and forgery convictions and size of the shadow economy, have decreased from 2010 to 2013 and 2014, respectively.</td>
<td>Introduction of PROOF system resulted in positive impact but used by less than 50% of companies. Transparency of information online also beneficial. Quantitative data suggests proxy indicators, such as fraud and forgery convictions and size of the shadow economy, have decreased from 2010 to 2013 and 2014, respectively.</td>
<td>No use of digital tools.</td>
<td>No use of digital tools.</td>
</tr>
</tbody>
</table>
### Appendix V: List of Member State-level *but-for* tests

This table presents the long-list of the Member State-level *but-for* tests developed on the basis of the available data and the initial impact hypotheses to frame the assessment of potential causal links.

<table>
<thead>
<tr>
<th>Member State</th>
<th><em>But-for test 1</em></th>
<th><em>But-for test 2</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bulgaria</strong></td>
<td>But for the use of digital tools for company registration, would the movement of companies (indicated by increased registered companies) to Bulgaria to exploit the low average labour costs have occurred?</td>
<td>But for the use of digital tools for company registration, would there be any other cause that would lead the reported impact to occur?</td>
</tr>
<tr>
<td><strong>Bulgaria</strong></td>
<td>But for the use of digital tools for company registration, would the movement of companies (indicated by increased registered companies) to Bulgaria to exploit the low corporate tax environment have occurred?</td>
<td>But for the use of digital tools for company registration, would there be any other cause that would lead the reported impact to occur?</td>
</tr>
<tr>
<td><strong>Bulgaria</strong></td>
<td>But for the use of digital tools for filing and disclosure of company information, would the perceived increases in the availability and transparency of company information have occurred?</td>
<td>But for the use of digital tools for filing and disclosure of company information, would there be any other cause that would lead the reported impact to occur?</td>
</tr>
<tr>
<td><strong>Bulgaria</strong></td>
<td>But for the use of digital tools across all four company operations, would the perceived increase in operational efficiency have been achieved?</td>
<td>But for the use of digital tools across all four company operations, would there be any other cause that would lead the increased efficiency?</td>
</tr>
<tr>
<td><strong>Bulgaria</strong></td>
<td>But for the use of digital tools for company registration, would the recorded increase in companies registered in Bulgaria between 2010 and 2016 have occurred?</td>
<td>But for the use of digital tools for company registration, would there be any other cause that would lead the reported impact to occur?</td>
</tr>
<tr>
<td><strong>Bulgaria</strong></td>
<td>But for the use of digital tools for company dissolution, would the recorded increase in the number of enterprise deaths in Bulgaria between 2010 and 2014 have occurred?</td>
<td>But for the use of digital tools for company dissolution, would there be any other cause that would lead the reported impact to occur?</td>
</tr>
<tr>
<td><strong>Germany</strong></td>
<td>But for the use of digital tools for mergers, would the reported increase in cross-border mergers between 2008 and 2012 have occurred?</td>
<td>But for the use of digital tools for mergers, would there be any other cause that would lead the reported impact to occur?</td>
</tr>
<tr>
<td><strong>Germany</strong></td>
<td>But for the use of digital tools for company registration, would the perceived movement of companies from Germany to Member States with lower average labour costs have occurred?</td>
<td>But for the use of digital tools for company registration, would there be any other cause that would lead the reported impact to occur?</td>
</tr>
<tr>
<td><strong>Germany</strong></td>
<td>But for the use of digital tools for company registration, would the perceived movement of companies from Germany to other Member States based on labour force suitability have occurred?</td>
<td>But for the use of digital tools for company registration, would there be any other cause that would lead the reported impact to occur?</td>
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<tr>
<td><strong>Germany</strong></td>
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<td><strong>Estonia</strong></td>
<td>But for the use of digital tools for company registration and filing and disclosure of</td>
<td>But for the use of digital tools for company registration, would there be any other cause</td>
</tr>
<tr>
<td>Country</td>
<td>Question 1</td>
<td>Question 2</td>
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<td>Hungary</td>
<td>But for the use of digital tools for company registration and filing and disclosure of company information, would the reported increase in inactive companies between 2010 and 2016 have occurred?</td>
<td>But for the use of digital tools for company registration, would there be any other cause that would lead the reported impact to occur?</td>
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<tr>
<td>Hungary</td>
<td>But for the use of digital tools for filing and disclosure of company information, would the perceived increase in the availability and transparency of company information have occurred?</td>
<td>But for the use of digital tools for filing and disclosure of company information, would there be any other cause that would lead the reported impact to occur?</td>
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<tr>
<td>Hungary</td>
<td>But for the use of digital tools for company registration and filing and disclosure of company information, would the perceived increase in the number of forms and documents to be submitted have occurred?</td>
<td>But for the use of digital tools for company registration and filing and disclosure of company information, would there be any other cause that would lead the reduction in documents and forms to occur?</td>
</tr>
<tr>
<td>Hungary</td>
<td>But for the use of digital tools across all four company operations, would the recorded and perceived increase in operational efficiency have been achieved?</td>
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<td>But for the use of digital tools for company dissolution, would the recorded increase in the enterprise death rate in Italy between 2008 and 2014 have occurred?</td>
<td>But for the use of digital tools for company dissolution, would there be any other cause that would lead the reported impact to occur?</td>
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<td>Netherlands</td>
<td>But for the use of digital tools for company registration, would the recorded increases in active companies (2009-2014) and registered companies (2010 to 2016) have occurred?</td>
<td>But for the use of digital tools for company registration, would there be any other cause that would lead the reported impact to occur?</td>
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<tr>
<td>Poland</td>
<td>But for the use of digital tools for company registration, would the perceived movement of companies to Poland based on labour force suitability have occurred?</td>
<td>But for the use of digital tools for company registration, would there be any other cause that would lead the reported impact to occur?</td>
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<td>Poland</td>
<td>But for the use of digital tools for company registration, filing and disclosure of company information and company dissolution, would the perceived increase in operational efficiency have been achieved?</td>
<td>But for the use of digital tools across all four company operations, would there be any other cause that would lead the increased efficiency?</td>
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<td>Poland</td>
<td>But for the use of digital tools for company registration and filing and disclosure of company information, would the recorded increase in enterprise births in Poland between 2012 and 2014 have occurred?</td>
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<tr>
<td>Poland</td>
<td>But for the use of digital tools for company registration, filing and disclosure of company information and company dissolution, would the perceived increase in legal certainty have occurred?</td>
<td>But for the use of digital tools across all four company operations, would there be any other cause that would lead the reported impact to occur?</td>
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<tr>
<td>Portugal</td>
<td>But for the use of digital tools for company registration, filing and disclosure of company information and mergers, would the perceived increase in operational efficiency have been achieved?</td>
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<td>But for the use of digital tools for company registration, would there be any other cause that would lead the increased efficiency?</td>
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<tr>
<td>United Kingdom</td>
<td>But for the use of digital tools for company registration and filing and disclosure of company information, would the recorded increases in enterprise births (2012-2014) and enterprise birth rate (2012-2014) in the UK have occurred?</td>
<td>But for the use of digital tools for company registration and filing and disclosure of company information, would there be any other cause that would lead the reduction in documents and forms to occur?</td>
</tr>
<tr>
<td>Estonia</td>
<td>But for the use of digital tools for company registration, filing and disclosure of company information and company dissolution, would the perceived increase in legal certainty have occurred?</td>
<td>But for the use of digital tools for company registration, filing and disclosure of company information and company dissolution, would there be any other cause that would lead the reported impact to occur?</td>
</tr>
<tr>
<td>Hungary</td>
<td>But for the use of digital tools for company registration and filing / sharing of information, would the recorded decrease in the number of litigation cases where legal certainty has been challenged (i.e. 59,360 to 35,063 from 2012 to 2016) have occurred?</td>
<td>But for the use of digital tools for company registration and filing / sharing of information, would there be any other cause that would lead the recorded impact to occur?</td>
</tr>
<tr>
<td>Poland</td>
<td>But for the use of digital tools for filing and disclosure of company information, would the perceived increase in legal certainty have occurred?</td>
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<td>But for the use of digital tools for company registration, filing and disclosure of company information and mergers, would there be any other cause that would lead the reported impact to occur?</td>
</tr>
</tbody>
</table>

**Legal certainty impact target area**
<table>
<thead>
<tr>
<th>Country</th>
<th>Question</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>But for the use of digital tools across all company law operations, would the recorded perception that fraudulent activities have been reduced have occurred?</td>
<td>But for the use of digital tools across all company law operations, would there be any other cause that would lead the perceived impact to occur?</td>
</tr>
<tr>
<td>Portugal</td>
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<td>But for the use of digital tools for company registration and filing and disclosure of company information, would there be any other cause that would lead the perceived impact to occur?</td>
</tr>
</tbody>
</table>
9.6 Appendix VI: Country fiches

See documents sent separately
9.7 Appendix VII: Insights from survey

In addition to the country fiches, the supplementary documentation provided in conjunction with this report contains two files that enclose information with regard to the stakeholder surveys that were designed and launched by the study team, through the GetFeedback online tool. These two files are as follows:

- The list of questions in the stakeholder surveys, their description and additional comments and annotations describing the design of the questionnaire; and
- The answers to both stakeholder surveys in different worksheets.

Specifically, the main objective of this survey was to collect data from relevant stakeholders in the 14 Member States on (i) the relevance of the positive and adverse impacts of using digital tools in the context of company law operations, (ii) the extent to which digital tools are in use for the national and cross-border implementation of the four company law operations, and (iii) the magnitude of these impacts.

The study team recorded a total of 138 responses to the stakeholder surveys: 112 responses to the general survey (i.e. targeted at public administration bodies and authorities) and 26 responses to the business survey.

In the general survey, 63% (i.e. 70 in total) of responses were in the geographical context of Germany, 21% (i.e. 23 in total) in the geographical context of Belgium, 13% quasi-equally distributed in the geographical context of the remaining 12 Member States in the scope of this study, and the remaining 3% in the geographical context of other Member States. In the survey targeted to businesses, 96% of responses (i.e. 25 in total) were in the geographical context of Germany, and 4% (i.e. 1 in total) in the geographical context of Portugal. Thus, the study team considers that reliable insights from the stakeholder surveys can only be taken with regard to the impacts of using digital tools for company law operations in the geographical scope of Germany.

In this context, more than 90% of survey respondents noted that there is a general high use of digital tools for company registration and filing and sharing of company information in Germany. This was also noted for company dissolution and mergers, with the exception of processes associated with drawing up, signing and certifying of documents.

In addition, the majority of respondents (i.e. 54%) classified the impact of using digital tools for company law operations on 'level of employment' as Neutral, and 39% of respondents classified it as Adverse; a similar classification was also recorded for 'working conditions', but with a Neutral to Adverse ration of 51% to 39%, respectively. A vast majority of respondents (i.e. 80%) have also classified the impacts of using digital tools for company law operations on 'income inequality' as Neutral.

Conversely, the impacts on the remaining indicator categories were classified as Adverse by a majority of respondents: social protection (i.e. 86%), labour market polarisation (i.e. 77%), loss of public revenue (83%), posting of workers (i.e. 81%), employee board representation (i.e. 81%), employee rights to information (i.e. 78%), tax evasion (i.e. 90%), financial crime (i.e. 87%), identity fraud (i.e. 88%).

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233 The study team designed and launched two different surveys for two stakeholder target groups: (i) businesses, (ii) public administration bodies and authorities.
234 See https://www.getfeedback.com/ for additional information.
235 See SURVEY_Assessment of the impacts of using digital tools in the context of cross-border company operations for more information.
236 It is worth noting that 69% of German respondents were representatives of notaries. (CORRECT?) Additionally, the results discussed regard the general stakeholder survey. However, the trend of responses to the business survey was the same.
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