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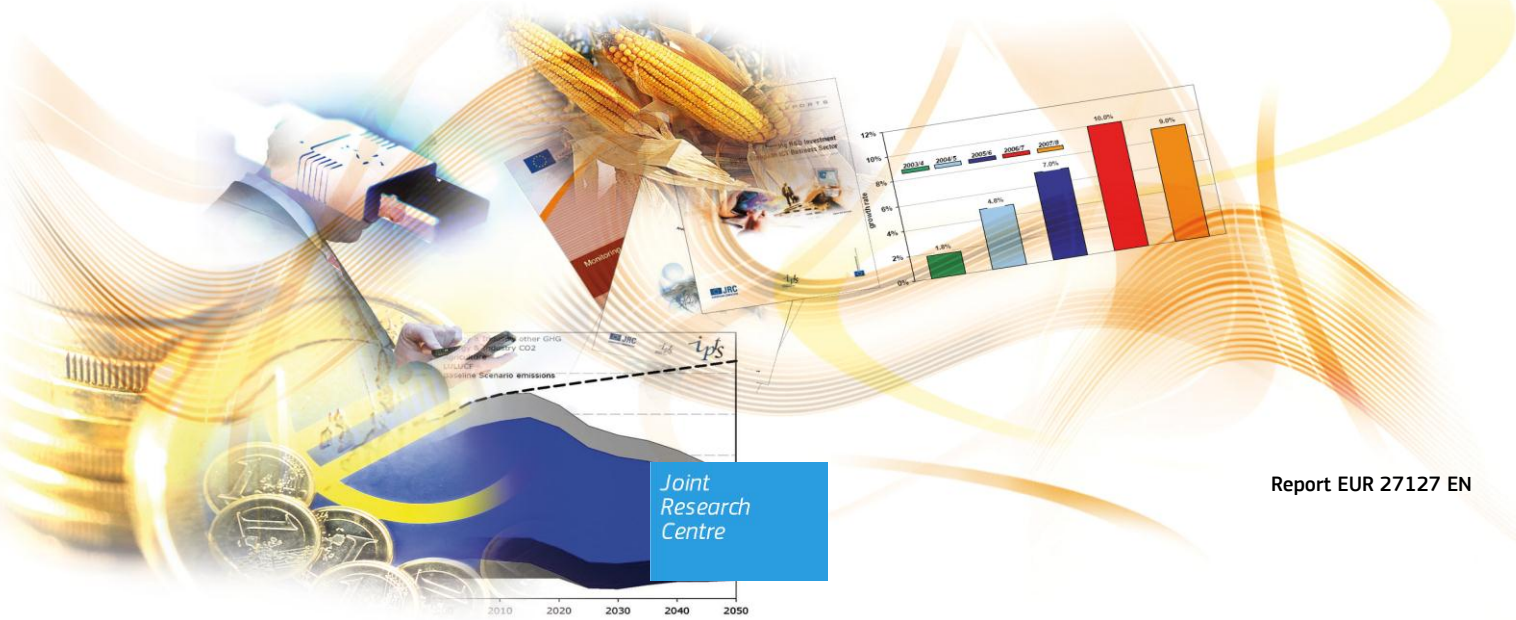
Birth, Survival, Growth and Death of ICT Companies

How are ICT companies faring in the European Union: a Macroeconomic Analysis

Garry A. Gabison

2015



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Abstract
As part of the EURIPIDIS (European innovation Policies for the Digital Shift) project, a joint project with DG CONNECT, IPTS investigates the birth and survival rates of ICT companies and compares it to the whole economy. This report uses the most recent available data from the Business demography dataset gathered by Eurostat.

From this data, ICT constitutes a small fraction of European companies (4.6% of all companies in 2011) and the European economy (4.8% of employed in these companies in 2011) but the number of ICT service companies is growing. The majority of European national economies have experienced a growing number of ICT companies between 2008 and 2011.

ICT companies tend to have higher survival rate than non-ICT companies. And finally, ICT sector tends to have a higher fraction of companies that are high growth companies than non-ICT sectors

Acknowledgements

This analysis was produced in the context of the "European Innovation Policies for the Digital Shift" (EURIPIDIS) project, which is jointly funded by DG CONNECT and JRC-IPTS of the European Commission.[1]

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[1] IPTS is one of the seven research institutes of the European Commission's Joint Research Centre (JRC).

Preface

This report was prepared in the context of the three-year research project on European Innovation Policies for the Digital Shift (EURIPIDIS) jointly launched in 2013 by JRC-IPTS and DG CONNECT of the European Commission. This project aims to improve understanding of innovation in the ICT sector and of ICT-enabled innovation in the rest of the economy.[2]

The purpose of the EURIPIDIS project is to provide evidence-based support to the policies, instruments and measurement needs of DG CONNECT for enhancing ICT Innovation in Europe, in the context of the Digital Single Market policy agenda and of the ICT priority of Horizon 2020. It focuses on the improvement of the transfer of best research ideas to the market.

EURIPIDIS aims are:

1. to better understand how ICT innovation works, at the level of actors such as firms, and also of the ICT "innovation system" in the EU;
2. to assess the EU's current ICT innovation performance, by attempting to measure ICT innovation in Europe and measuring the impact of existing policies and instruments (such as FP7 and Horizon 2020); and
3. to explore and suggest how policy makers could make ICT innovation in the EU work better.

The present report contributes to the second bullet point above, by comparing the ICT sector to the rest of the economy. Specifically, this report compares ICT with non-ICT companies on three statistics: the number of ICT company births and deaths to assess the churning of companies; the survival rate of ICT companies; and the number of high growth ICT companies.

[2] For more information, see the project web site: http://is.jrc.ec.europa.eu/pages/ISG/EURIPIDIS/EURIPIDIS.index.html

Executive Summary

As part of the EURIPIDIS (European Innovation Policies for the Digital Shift) project, IPTS investigated the birth and survival rates of ICT companies and compared them with those of the whole economy. This report used the most recent available data from the business demography dataset gathered by Eurostat. From this data, IPTS investigated three questions:

- How important is the ICT sector to the European economy in terms of new companies and new jobs?
- How are new ICT companies surviving within the European economy?
- How are new ICT companies growing within the European economy?

First, ICT companies constituted a small fraction of European companies (4.6% of all companies in 2011) and the European economy (4.8% of employed in these companies in 2011). However, the number of ICT service companies was growing:

- The share of ICT companies in the EU economy steadily increased: in 2011, 6% of new companies were ICT companies;
- Newly-created ICT companies outnumbered exiting ICT companies at a faster rate than newly-created non-ICT companies outpaced exiting non-ICT companies;
- The ICT service sector led the way: ICT service companies represented three out of every four ICT companies; and almost nine in every ten new ICT companies were ICT service companies;
- Births of ICT service companies outnumbered their deaths, but the deaths of ICT manufacturing and wholesale companies outpaced their births.
- The majority of European national economies had a growing number of ICT companies between 2008 and 2011:
    - The number of new ICT service companies increased in the majority of European countries in spite of the economic crisis
    - European national economies on average lost companies in ICT manufacturing and wholesale during this period.

Table 1 below is a summary of all these findings.

Second, more and more individuals were employed in services and in ICT:

- In 2011, employment in the ICT sector represented a growing fraction (4.8%) of the employed population and the average ICT company had more employees than the average non-ICT company.
- ICT service companies employed three quarters of the people employed in ICT companies, and ICT service companies created nine out of every ten jobs created in new ICT companies.
- Employment created by new ICT service companies more than compensated for the employment eliminated by deaths of ICT service companies – and also ICT companies in general;
- Employment eliminated by exiting ICT manufacturing and ICT wholesale companies outnumbered the creation of jobs from new ICT manufacturing and ICT wholesale companies.

Third, ICT companies had a higher survival rate than non-ICT companies. ICT service and ICT wholesale companies had higher survival rates than their non-ICT counterparts whereas ICT manufacturing companies had a lower survival rate than manufacturing companies in general.

And finally, the ICT sector tended to have a higher fraction of high-growth companies than non-ICT sectors. Furthermore, a greater fraction of ICT services companies became high growth than ICT wholesale and ICT manufacturing companies.

Table 1: Key Statistics about ICT Company Dynamics in Europe.

Percent of ICT Companies in total in 2011	Share of Employed in these ICT Companies in 2011	Share of New Companies that are ICT Companies in 2011	Share of Employed in New Companies That Are Employed in ICT Companies in 2011	2011 Survival Rate of ICT Companies Created in 2008	2011 Survival Rate of non-ICT Companies Created in 2008	Share of ICT Companies That Are High Growth in 2012
4.6%	***4.8%***	***6.0%***	***5.1%***	***61%***	***55%***	***15.8%***

Source: Eurostat Business demography statistics

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1. Introduction

This report was prepared in the context of the three-year research project on European Innovation Policies for the Digital Shift (EURIPIDIS) jointly launched in 2013 by JRC-IPTS and DG CONNECT of the European Commission. This project aims to improve the understanding of innovation in the ICT sector and of ICT-enabled innovation in the rest of the economy.[3]

This report tries to answer three questions:

1. How important is the ICT sector to the economy in terms of companies, company creation, employment, and employment from these company creations?
2. How are ICT companies surviving as compared to non-ICT companies?
3. How are ICT companies growing as compared to non-ICT companies?

This report focuses on the birth, growth, survival, and death of ICT companies to further understand the relative place of the ICT sector in the European economy overall and the individual Member State national economies. It focuses on the ICT sector at company level, while the macro-economic characteristics of the ICT sector are analysed in detail in the JRC-IPTS project Prospective Insights on R&D in ICT (PREDICT).[4]

This report uses the NACE Rev 2 classification provided by the OECD and Eurostat. This classification categorises businesses and separates them according to their main activities. Therefore, the number of individuals employed in ICT companies may underestimate ICT employment because it does not include those who perform ICT tasks in non-ICT companies. However, this report focuses solely on ICT companies, whose main activity is ICT and on employment within these companies.[5]

New Companies and the Jobs They Create

This report looks first at how ICT companies are growing within the European economy. It focuses on the importance of ICT to European economies and, specifically, on the importance of new ICT companies for growth, as measured by the number of employed.[6] Employment growth can come either internally from existing companies steadily growing, or externally from new companies entering the market. A recent OECD study[7] asserts that companies less than 5 years old contribute about 50% of new jobs. Half of the growth in the number of jobs comes internally – from existing companies growing and creating new jobs – and half comes externally – from new companies entering the market and creating jobs. Thus, this report takes a look at new companies and the number of jobs created by these companies.

ICT companies constitute a small fraction of all European companies (5.6% of all companies in 2011) and of employment in European national economies (4.8% of employed in these companies in 2011). The ICT sector is, however, growing in terms of number of companies. The share of ICT companies in the economy has steadily increased for two reasons. First, it has increased because the share of new companies that are ICT companies (6% in 2011) is larger than the share of active companies that are ICT companies (4.6% in 2011). Second, newly-created ICT companies

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3 For more information, see the project web site: http://is.jrc.ec.europa.eu/pages/ISG/EURIPIDIS/EURIPIDIS.index.html

4 For more details, visit: http://is.jrc.ec.europa.eu/pages/ISG/PREDICT.html

5 See also OECD (2014) "Delivering growth and jobs," in *Measuring the Digital Economy: A New Perspective*, OECD Publishing http://dx.doi.org/10.1787/9789264221796-9-en for further discussions of these issues.

6 We must emphasise an important distinction between the number of "employed" people and the number of "employees": the number of employed includes all individuals who work for a company; whereas the number of employees does not include the employer.

7 Criscuolo, C., P. N. Gal and C. Menon (2014), "The Dynamics of Employment Growth: New Evidence from 18 Countries," OECD Science, Technology and Industry Policy Papers, No. 14, OECD Publishing. http://dx.doi.org/10.1787/5jz417hj6hg6-en

outnumber exiting ICT companies[8] at a faster rate than newly-created non-ICT companies outnumber exiting non-ICT companies.

This report investigates three sectors and three ICT subsectors of the economy: services and ICT services; manufacturing and ICT manufacturing; wholesale and ICT wholesale.[9] ICT service companies drive the observed increase of ICT companies within the broader economy. European economies become more and more tertiary economies and service companies account for more than three quarters of all companies. The ICT subsectors reflect this wider shift toward the tertiary sector: ICT service companies represent three quarters of all ICT companies and almost nine in every ten new ICT companies are ICT service companies.

While new ICT companies outnumber exiting ICT companies overall, this phenomenon does not occur in every ICT subsector. New companies outnumber exiting companies in ICT (and non-ICT) services, whereas company deaths outnumber company births in ICT (and non-ICT) manufacturing and wholesale.

In terms of employment, more and more individuals are employed in the service industry and in ICT services. The gap between the service sector and the manufacturing sector has been widening in terms of employment, much as it has widened in terms of the distribution of companies.

Within the European economy, the active population employed in ICT represents a growing section of the employed population. This growth comes from established companies that hire more people and from new companies that create new jobs. New ICT service companies create the large majority of jobs (nine in every ten jobs created in new ICT companies are in ICT service companies).

In contrast, jobs disappear when established companies contract or exit the market. For the ICT (and non-ICT) service sector, jobs created by new companies exceed jobs eliminated by exiting companies; whereas the contrary occurs for ICT (and non-ICT) manufacturing and wholesale sectors.

Looking more closely at EU Member States, this report finds that they experience different growth patterns with respect to sectorial distribution, company creation, and employment in new companies. Some of these observations point to a sectorial comparative advantage or specialization for certain Member States.

The majority of European economies have seen a growth in the numbers of new ICT service companies in recent times, though they have on average lost companies in ICT manufacturing and ICT wholesale. Net employment from these newly-created and exiting ICT companies follow the same pattern: births and deaths of ICT manufacturing and ICT wholesale companies led to job tightening, whereas births and deaths of ICT service companies led to job creations.

ICT Companies Survive Longer

This report also focuses on how new ICT companies are surviving within the European economy. After three years, ICT companies tend to have a higher survival rate than non-ICT companies. Specifically, ICT service and ICT wholesale companies have higher survival rates than their non-ICT counterparts whereas ICT manufacturing companies have a lower survival rate than non-ICT manufacturing companies. Therefore, while the manufacturing sector has lately suffered in Europe, the number of ICT manufacturing companies in Europe has contracted even faster. Comparing Member States shows that survival rates overall vary greatly between them; yet, ICT companies have higher survival rates than non-ICT companies in almost every Member State.

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[8] This report uses the term "exiting company" to mean companies that go out of business and therefore exit the economy. These exits are labelled "company deaths" in the Eurostat database.

[9] While wholesale is generally treated as a subsector of the service industry, this report separates wholesale from the broader service industry to draw further difference and patterns.

ICT Companies Experience Better High Growth Results

Finally, this report analyses whether ICT companies grow faster than their non-ICT counterparts. Data show that the ICT sector tends to have a higher fraction of companies that are high growth companies than non-ICT sectors. Therefore, not only are the numbers of ICT companies growing, but a greater percentage of them are becoming high growth companies

This report investigates company births and deaths; survival; and growth in turn. Section 2 starts with a table which summarises all the findings that follow. Section 3 looks at the number of ICT companies and the number of people employed in active ICT companies in 2011. It also looks at the number of new ICT companies and employment in these new companies created in 2011. After giving an overview of the situation in Europe, this section investigates the trends in individual Member States. Section 4 looks at the survival rate of companies in the three sectors being investigated: service and ICT service companies; manufacturing and ICT manufacturing companies; and wholesale and ICT wholesale companies. Section 5 discusses high growth ICT companies in Europe and looks at how ICT companies compare to their non-ICT counterparts. Section 6 offers some conclusions.

2. The Importance of the ICT Sector to the European Economy in Four Statistics

This section discusses "Impact Metrics." These metrics are summary statistics that can be used to show the importance of the ICT sector to the European economy in general and to individual Member States in particular. Each individual column in Table 2 below summarizes data from the different sections of this report, where it is discussed in more detail. Columns 2 and 3 are discussed in Section 3; Column 4 is discussed in Section 4; and Column 5 is discussed in Section 5. Data from twenty-six Member States are included in the table. Greece and Croatia did not participate in the harmonised data collection exercises.

Country	Percentage of ICT Companies in Total New Companies in 2011	Share of Employed in New Companies That Are in ICT Companies in 2011	2011 Survival Rate of ICT Companies Created in 2008	Share of ICT Companies That Are High Growth in 2012[+]
European Union	*6.0%*	*5.1%*	*61%[2]*	*15.8%[+]*
Austria	5.6%	3.2%	71%	11.5%
Belgium	8.0%	7.5%	75%	13.9%
Bulgaria	3.9%	3.7%	71%	14.4%
Cyprus	4.3%	2.5%	65%	7.0%
Czech Rep.	2.4%	2.2%	74%	17.9%
Denmark	11.6%	10.8%	N/A	16.2%
Estonia	6.8%	5.1%*	28%	6.9% [#,##,###]
Finland	4.9%	5.3%	56%	17.4%
France	6.1%	5.9%*	68%	16.9%[##]
Germany	5.3%	4.6%	48%	20.2%[##]
Hungary	5.1%	4.7%	67%	14.5%
Ireland	10.8%*	7.3%*	75%[1]	16.5%[#,##]
Italy	3.8%	3.1%	62%	10.4%
Latvia	6.8%	7.0%	58%	12.9%
Lithuania	2.8%	2.3%	50%	14.4%[#,##]
Luxembourg	7.5%	6.0%*	76%	18.3%
Malta	6.6%	4.9%	N/A	10.1%
Netherlands	7.5%	6.4%	66%	16.5%
Poland	8.1%	7.6%	70%	14.3%
Portugal	1.9%	2.1%	43%	14.1%
Romania	6.8%	4.8%	51%	5.3%
Slovakia	4.9%	4.7%	63%	16.7%
Slovenia	5.8%	6.2%**	73%	7.9%
Spain	3.4%	2.7%	53%	12.1%
Sweden	11.1%	11.0%	78%	20.4%
U.K.	11.9%	6.8%	60%	17.6%

* 2010 Data ** 2009 Data

[1] companies created in 2007 that survived to 2010; [2] uses only 2011 data

[#] Some data missing on one (or multiple) of ICT service subsector(s); [##] Some data missing on one (or multiple) ICT manufacturing subsector(s); [###] No Information on ICT wholesale

[+] Number of high growth companies in 2012 is divided by the number of active ICT companies in 2012 (except Finland using 2011 active companies); Average includes Croatia not in the rest of the table because not an EU Member State in pre-2012. Without Croatia, the EU average is 15.9%.

High growth companies are companies with 10 or more employees and 10% or more growth as measured by employment over at least 3 years

Source: Eurostat Business demography statistics

Table 2: Heat Map Statistics of the ICT Sector to the European Economy

3. Births and Deaths of ICT Companies

3.1. Analysis of Established and New Companies by Subsectors of the Economy

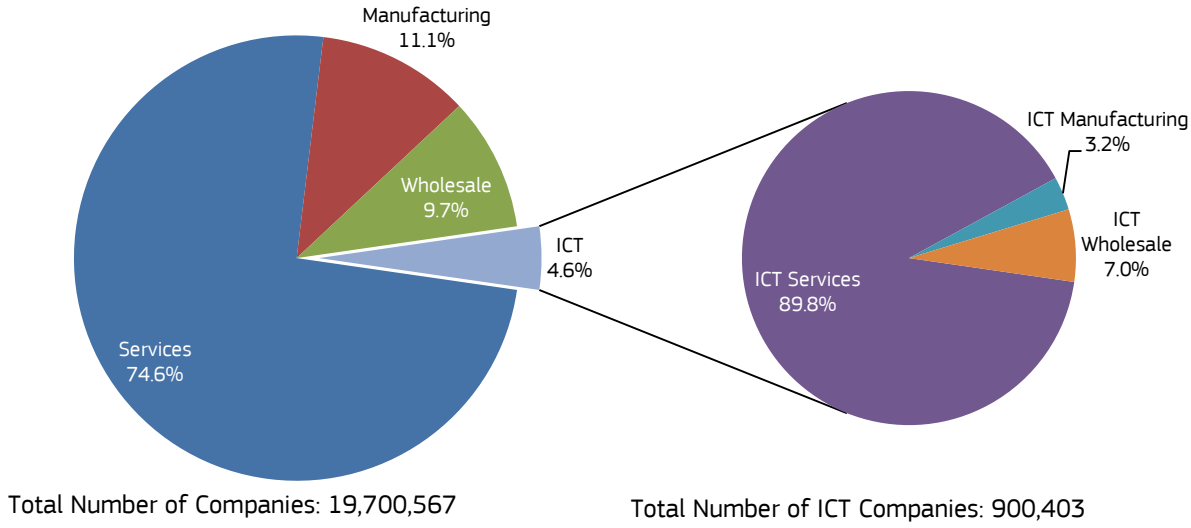
This section first looks into the distribution of companies over the sectors of the economy. Then, it investigates this distribution for new companies. The service industry is the dominant subsector of the economy when looking at the number of active companies. It is also the dominant creator of new companies. Europe is shifting toward a service company-dominated economy.

ICT is a small but growing sector of the European economy in terms of number of companies. ICT service companies spearhead this growth, whereas numbers of ICT wholesale and ICT manufacturing companies are stagnating or decreasing in number.

Active Companies by Subsectors: Services Leading the Way.

This subsection looks at the distribution of companies over the sectors of the economy in 2011. Figure 1 presents the shares of active companies in the 26 reporting European economies in 2011.[10] In order to be able to include all 26 countries, this figure had to use 2010 data for Ireland. It also shows the total number of active companies in the economy. It isolates ICT as a subsector of the economy and shows the distribution of companies across ICT services, ICT wholesale, and ICT manufacturing. The Annex explains how the datasets were constructed and aggregated in order to allow comparison between the subsectors of ICT and non-ICT sectors. Finally, this figure also includes the number of active ICT companies, which are also included in the total number of active companies.

Figure 1: Distribution of Active Companies over the Sectors of the Economy in 2011 in Europe



2011 data; 2010 data for Ireland; no data on Greece and Croatia.
Denmark, Ireland, Poland, and Sweden: no data on Education; human health and social work activities; arts, entertainment and recreation; other service activities.
Source: Eurostat Business demography statistics

Service companies form the largest sector of the economy. The number of service companies is seven times bigger than the number of manufacturing and wholesale companies. The ICT sector accounts for 4.6% of all companies.

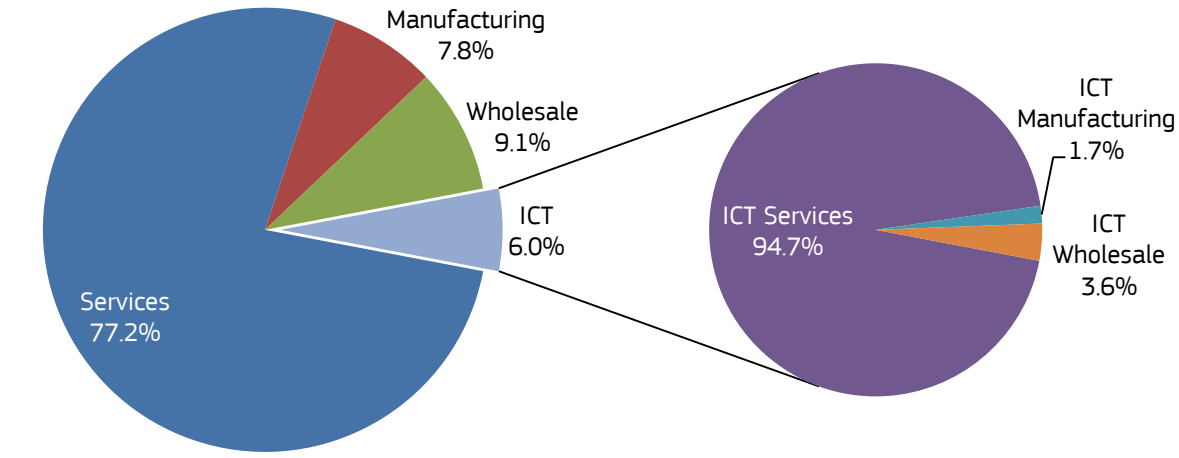
The gap between service companies and manufacturing/wholesale companies is larger in the ICT sector than it is in the non-ICT sector. In fact, ICT service companies account for most of the ICT companies: there are ten times more of them than there are ICT wholesale companies or ICT manufacturing companies.

[10] The dataset include self-reported data from the 26 of the 28 European Union Member States. There is no data available for Greece and Croatia.

New Companies by Sectors: Services and ICT gaining ground.

Figure 2 represents the shares of new companies created in each subsector in the same 26 European national economies in 2011. In order to be able to include Ireland, it was necessary to use 2010 data. New service companies also outnumber new manufacturing and wholesale companies; however, the distribution of new companies over each subsector is slightly different.

Figure 2: Distribution of New Companies over the Sectors of the Economy in 2011 in Europe



Total Number of New Companies: 1,913,595 Total Number of New ICT Companies: 113,950

2011 data (2010 data for Ireland); no data on Greece and Croatia.
Denmark, Ireland, Poland, and Sweden: no data on Education; human health and social work activities; arts, entertainment and recreation; other service activities.
Projected numbers for Finland ICT manufacturing based on trend and 2010 data.
Source: Eurostat Business demography statistics

First, new non-ICT service companies accounted for 77.2% of new companies in 2011. New non-ICT wholesale companies comprised 9.1% of new companies in 2011; while new non-ICT manufacturing companies accounted for about 7.8% of new companies in 2011. A higher ratio of non-ICT service companies were created than were already present, whereas a lower ratio of non-ICT manufacturing and non-ICT wholesale were created.

Second, new ICT companies comprised 6.0% of new companies in 2011. New ICT service companies outnumbered new ICT wholesale and ICT manufacturing companies. This gap between ICT service companies and the other ICT subsectors was even larger than the gap between their non-ICT counterparts. New ICT services represented 94.7% of all new ICT companies in 2011 while service companies (ICT included) represented 82.8% of all companies: European Member States are shifting toward the tertiary sector.

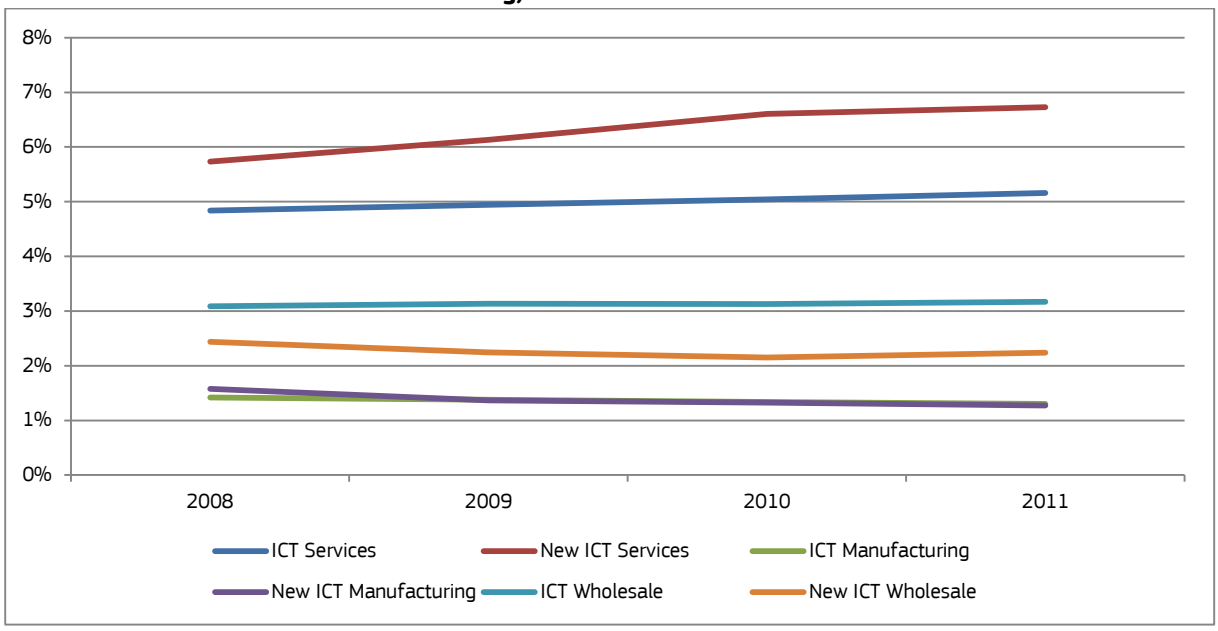
Third, the share of new ICT companies (see Figure 2) was greater than the share of active ICT companies in Figure 1. Therefore, this share of ICT companies increased as compared to non-ICT companies. This growing number of ICT service companies drove the increasing ratio of ICT companies within the global economy. The number of ICT service companies significantly increased whereas the other two subsectors either stagnated or decreased.

Conclusion: The Pool of ICT Companies Keeps Growing Thanks to ICT Services

Comparing the number of new companies in Figure 2 to the number of active companies in Figure 1 shows that 12.7% of ICT companies were new companies whereas only 9.6% of non-ICT companies were new companies in 2011. Therefore, the number of ICT companies grew at a faster rate than non-ICT companies.

Figure 3 compares the share of active ICT companies to active companies in the respective subsectors and the share of new ICT companies to new companies created in a given year between 2008 and 2011 in Europe.

Figure 3: Shares of Active & New ICT Companies to Active & New Companies in Services, Manufacturing, and Wholesale for 2008-11.



23 EU countries –countries excluded: Denmark, Ireland, and Malta for lack of consistent data; no data on Greece and Croatia.
Estimated numbers for: France Education data in 2008 using 2009 data and a linear estimation;
Source: Eurostat Business demography statistics

Figure 3 shows that:

- The share of ICT service companies in service companies in general increased from 4.8% in 2008 to 5.2% in 2011, a 0.33 percentage point increase between 2008 and 2011.
- ICT manufacturing companies comprised a decreasing fraction of manufacturing companies; ICT manufacturing companies represented 1.4% of manufacturing companies in 2008 and 1.3% in 2011, a 0.12 percentage point decrease between 2008 and 2011.
- The number of active ICT wholesale companies increased slowly as a share of all wholesale companies from 3.1% in 2008 to 3.2% in 2011 - a 0.09 percentage points increase between 2008 and 2011.

New ICT service companies represented 5.7% of new service companies in 2008 and this share increased to 6.7% in 2011. Since this share constantly increased, the cohort of active ICT service companies increased at a faster pace than the cohort of service companies. Similarly, since service companies were an increasing portion of companies, ICT services represented an increasing portion of all companies.

New ICT service companies also grew as a share of all new ICT companies from 93.3% in 2008 to 94.7% in 2011 (not shown in Figure 3). This increase in the percentage of new ICT service companies was also a mathematical result of the stagnation or shrinking of the other two ICT subsectors. New ICT wholesale and manufacturing companies made up a decreasing fraction of new ICT companies in their respective subsectors. New ICT wholesale companies similarly accounted for 2.4% of new wholesale companies in 2008 to 2.2% in 2011. New ICT manufacturing companies accounted for 1.6% of new manufacturing companies in 2008, but only 1.3% in 2011.

3.2. Analysis of Employment in Established and New Companies by Subsectors of the Economy

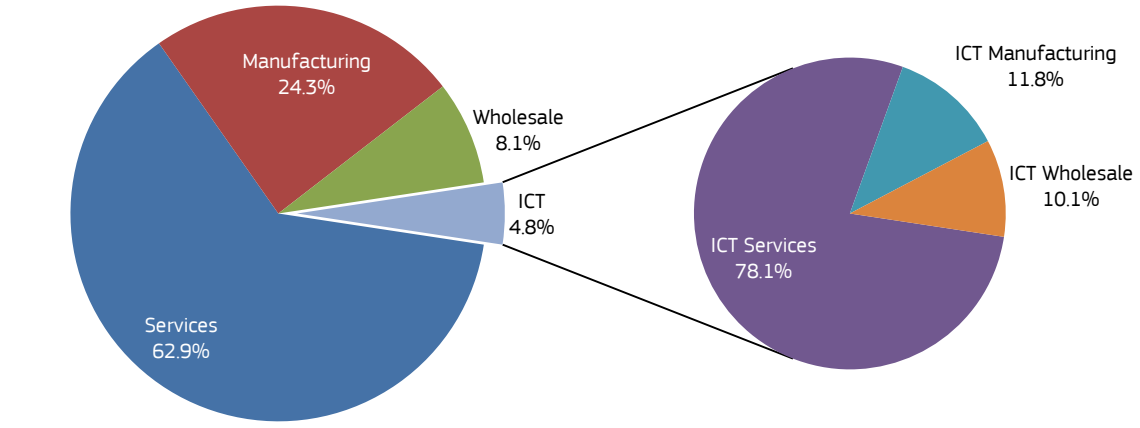
This section first delves into the distribution of people employed in active companies over the economic sectors. Then, the section investigates the distribution of the employed population in new companies. While the service industry is the principal employer of the economy, it does not dominate the other sectors of the economy as dramatically as it does with the number of companies. It does, however, employ more people in new companies. Thus, in Europe, the population employed in active companies is shifting slowly toward the service industry.

Comparing Figure 4 with the cross-sectorial company distribution (Figure 1) shows that, in Europe, the ICT sector employs a larger share of active employed individuals than the share of active companies that the ICT sector comprises. ICT service companies employ an increasing number of individuals whereas employment in ICT wholesale and ICT manufacturing companies stagnates or decreases. An increasing share of individuals is also being employed in active and new ICT service companies.

Employment in All Active Companies: Manufacturing Companies on Average Employ More Individuals

Figure 4 shows the share of individuals employed by companies by subsectors in 2011 in the 26 European reporting countries.[11] In order to be able to include all countries, this figure uses 2010 data for Ireland. First, the number employed in the service industry was larger than in the manufacturing or wholesale industry. The number employed in service companies was about seven times bigger that it was in wholesale companies, whereas the number employed in service companies was only two or three times bigger that it was in manufacturing companies.

Figure 4: Distribution of Individuals Employed over the Sectors of the Economy in 2011 in Europe



2011 data; 2010 data for Ireland; no data on Greece and Croatia.
No information on Education; human health and social work activities; arts, entertainment and recreation; other service activities for Denmark, Ireland, Poland, and Sweden.
No data on the number of employed in ICT manufacturing in Luxembourg for all 4 years: Luxembourg only had 2 ICT manufacturers in 2008-2010 and 3 in 2011.
Source: Eurostat Business demography statistics

In 2011, the average manufacturing company created more employment than the average service company: manufacturing companies had on average 13 employees as compared to 5 employees in services companies.

[11] The dataset includes self-reported data from the 26 of the 28 European Union Member States (Greece and newly-admitted Croatia did not report any data).

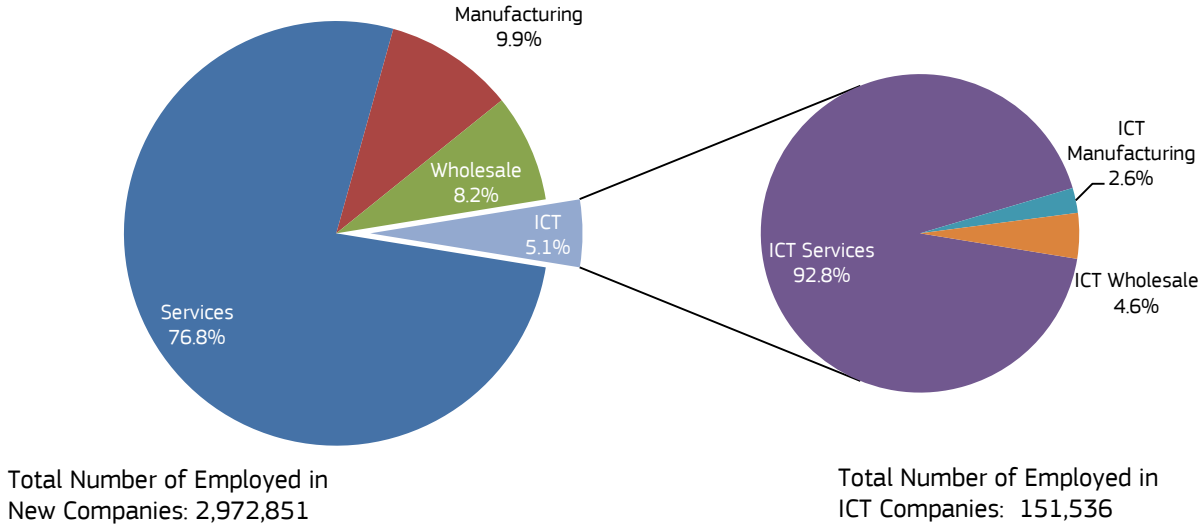
The share of people employed in ICT was 4.8% of all those employed in the economy in 2011. Those employed in the ICT service companies represented 3.7% of all employed in 2011; those employed in ICT wholesale companies about 0.5%; and in ICT manufacturing 0.6%. Within the ICT sector, the distribution of people employed differs by subsector as compared to the distribution of companies. ICT service companies represent almost nine out of every ten companies but they employ only three quarters of those employed in ICT (78.1% in 2011).

Employment in New Companies: The Share of People Employed in New ICT Companies is bigger than the Current Share of People Employed overall.

Figure 5 shows the share of those employed by newly-created companies by subsectors in the same 26 European countries in 2011. Newly-created service companies create three quarters of this employment.

More people are employed in new service companies than in manufacturing or wholesale companies. The distribution of people employed in new companies resembles the distribution of new companies – when focusing on the distribution between the service, manufacturing, and wholesale sectors.

Figure 5: Distribution of Individuals Employed in New Companies over the Sectors of the Economy in 2011 in Europe



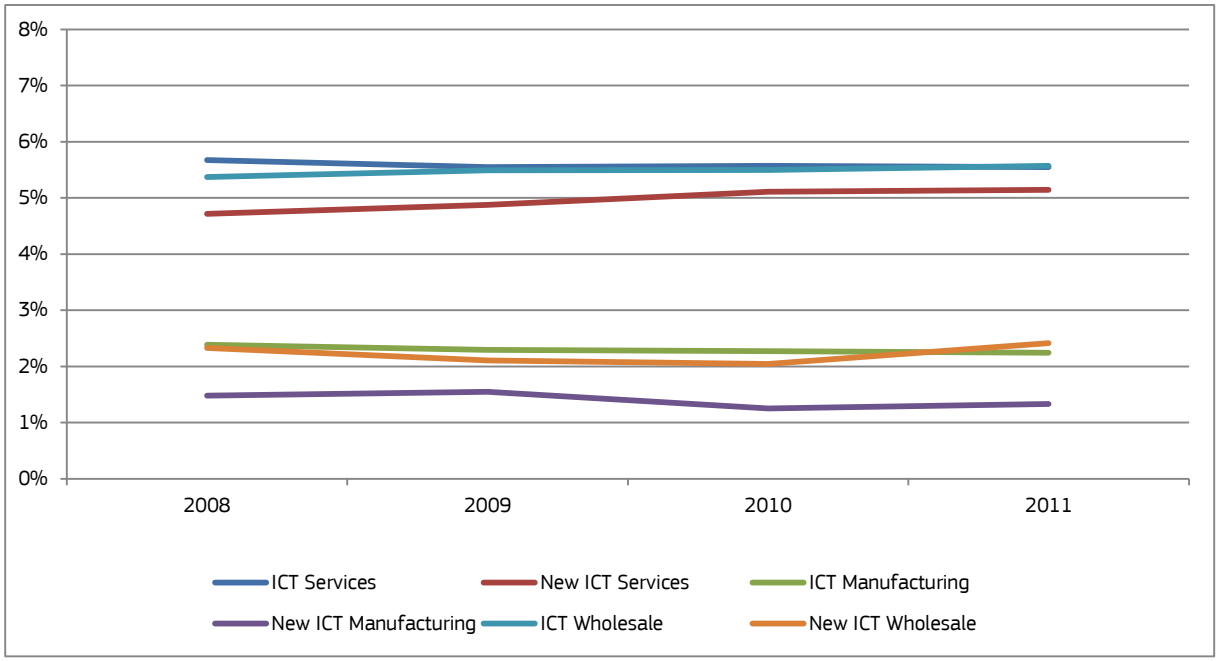
2011 data; 2010 data for Estonia, France, Ireland, and Luxembourg; 2009 data for Slovenia.
Source: Eurostat Business demography statistics

Service companies account for three quarters of the employment created by new companies. The share of people employed in new manufacturing companies is slightly larger than that of new manufacturing companies in the global economy (see Figure 2 and Figure 5): new manufacturing companies (2 employees per company) employ on average more than new service companies (1.5 employees per company). The average new ICT company, on the other hand, is smaller than the average non-ICT company. Combining this observation with the previous observation means that the average ICT company must create more jobs later in its life cycle than non-ICT companies because they start smaller and become bigger than non-ICT companies. New ICT companies have 1.3 employees per company whereas new non-ICT companies have 1.6 employees per company. This point is revisited later in Section 5.

Conclusion: Employment in ICT Companies Keeps Growing thanks to ICT Services

Figure 6 shows the shares of individuals employed in the ICT sector by subsectors and for newly-created and active ICT companies from 2008 to 2011.

Figure 6: Shares of Individuals Employed in Active and New ICT Companies within the Population Employed in Active and New Companies in the Comparable non-ICT Subsectors for 2008-11



Employment in Active Companies 23 EU countries – countries excluded: Denmark, Ireland, and Malta for lack of consistent data.
Estimated numbers for: Estonia Manufacturing data in 2008 using 2009 data and a linear estimation;
Employment in New Companies data for 17 EU countries – specifically: Austria, Belgium, Bulgaria, Czech Republic, Finland, Germany, Hungary, Italy, Latvia, Lithuania, Netherlands, Poland, Portugal, Romania, Slovakia, Spain, and Sweden.
Estimated numbers for: Slovakia ICT Services and ICT Manufacturing data in 2008 using 2009 data and a linear estimation;
Source: Eurostat Business demography statistics

The shares of individuals employed (expressed as a fraction of the population employed in the economy) varies little in all three ICT subsectors. ICT service companies employed around 5.6% of individuals employed in services over the time period (decreasing from 5.7% in 2008 to 5.65% in 2011, a 0.13 percentage point decrease). The share of people employed in ICT manufacturing slightly decreased from 2.4% of all employed in manufacturing in 2008 to 2.2% in 2010; whereas the share of those employed in ICT wholesale slightly increased from 5.4% of all employed in wholesale in 2008 to 5.6% in 2011.

When these results are compared with the results from Section 3.1, ICT companies employ on average slightly more than non-ICT companies: 6.1 employees per non-ICT company as compared to 6.2 employees per ICT company in 2011.

Figure 6 shows that:

- The share of individuals employed in new ICT service companies to individuals employed in new service companies increased from 4.7% of in 2008 to 5.2% in 2010.
- The share of those employed in new ICT manufacturing companies decreased from 1.5% of those employed in new manufacturing companies in 2008 to 1.3% in 2011.
- The number of employed in new ICT wholesale companies oscillated around 2.3% of those employed in new wholesale companies from 2008 to 2011.

The share of individuals employed in new ICT service companies also increased as a portion of the number of employed in new ICT companies. It increased from 89.8% in 2008 to 91.2% in 2011 (not shown in Figure 6). This increase mirrors the change observed in the number of new ICT companies.

Overall, the number of employed in newly-created companies slowly decreased over the time period. The number of employed in newly-created service and wholesale companies steadily decreased. The number of employed in newly-created manufacturing companies oscillated, but overall it decreased over the period.

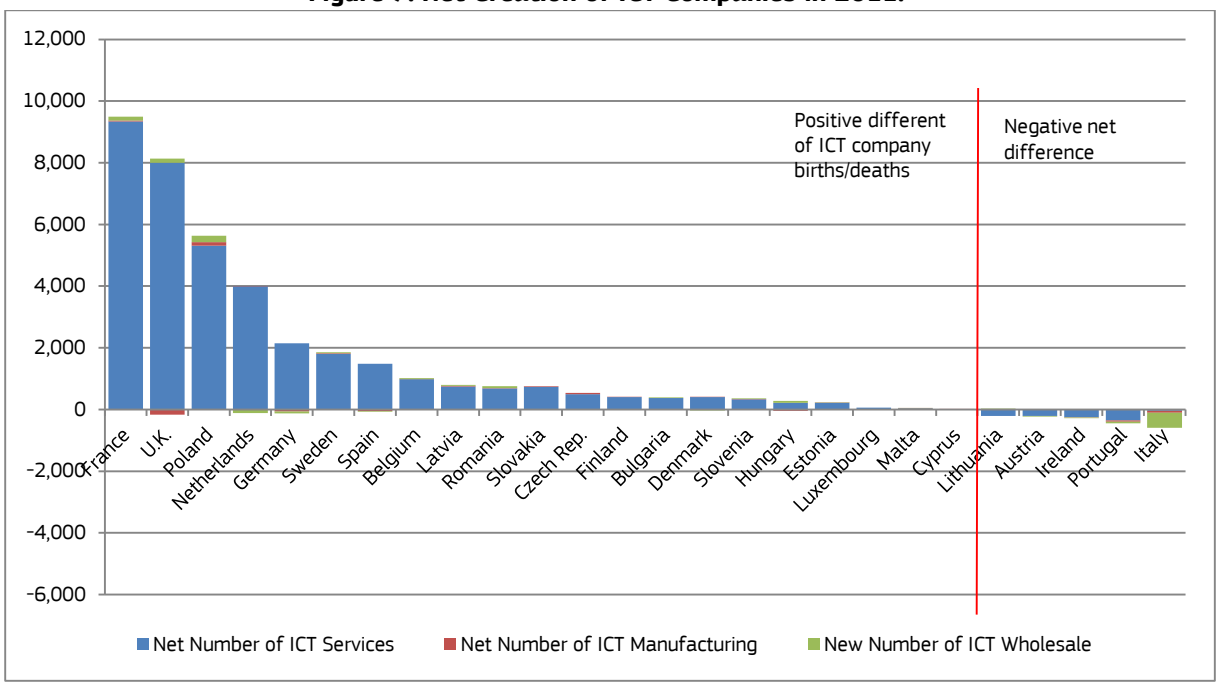
The share of employed in newly-created ICT companies decreased as well, but the decrease was concentrated in ICT manufacturing companies. New ICT services and wholesale companies employed an increasing share of individuals employed by ICT companies in 2008 and in 2011.

3.3. Net Creation of ICT Companies across Member States

EU Member States have different types of economies and socio-economic characteristics. Although they experience different kinds of growth in ICT and its subsectors, ICT services remain the main driving force behind ICT growth in most European countries.

Figure 7 presents the net number of ICT companies that was created or destroyed in 2011 in Europe. However, because of data limitations, the figures represent the most recently available information for some countries: 2010 for Poland and Cyprus; 2009 for Ireland.

Figure 7: Net Creation of ICT Companies in 2011.



Countries ordered by the net number of ICT companies: number of company births minus the number of company deaths.
Denmark, Ireland, Poland, and Sweden do not report information for a service subsector: Education; human health and social work activities; arts, entertainment and recreation; other service activities.
Data 2011; except: 2010 data for Cyprus and Poland; 2009 data for Ireland.
Source: Eurostat Business demography statistics.

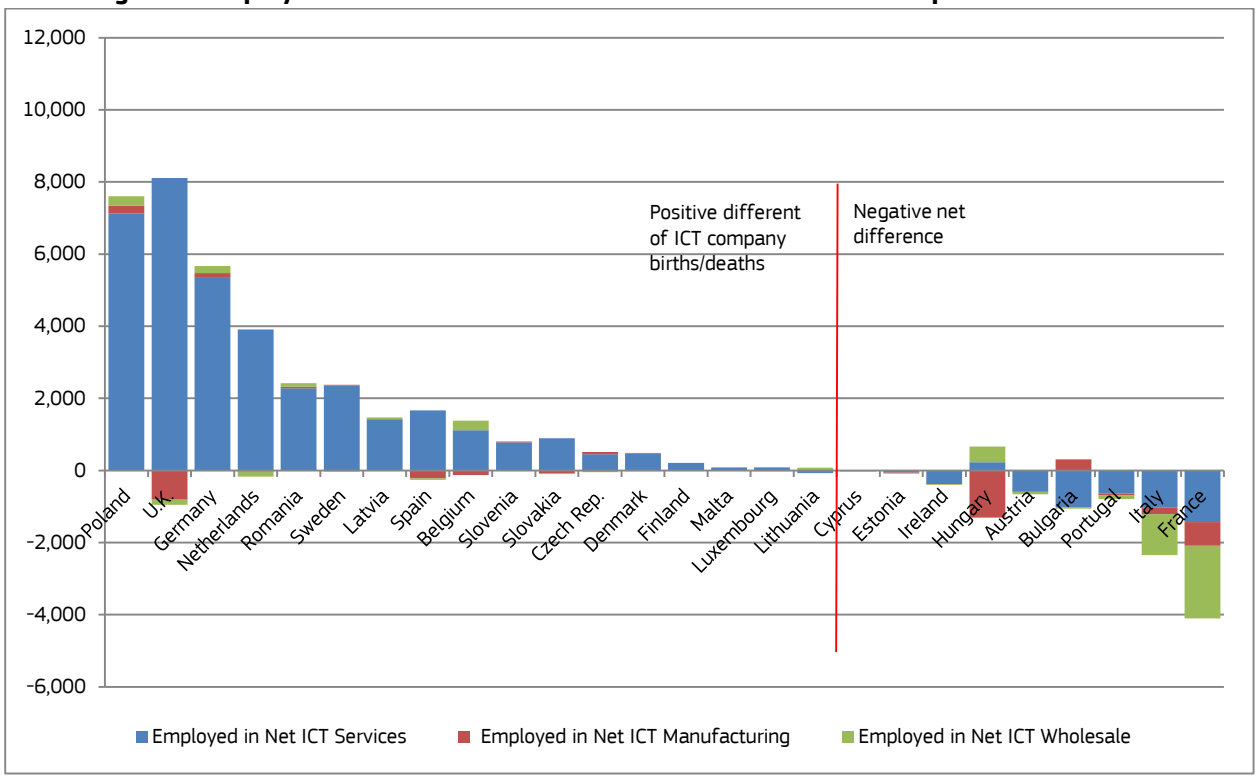
Figure 7 shows the divergences between countries. In 2011 in most countries, the ICT sector saw more companies created than companies exiting the market. However, in Lithuania, Austria, Ireland, Portugal, and Italy, the number of exiting companies was greater than the number of new ICT companies. Overall, Europe saw more ICT company births than deaths. In most European countries, ICT service companies dominated and drove this overall increase.

Figure 8 shows the associated employment from these ICT companies in 2011 However, due to lack of data, 2010 data is used for France, the Netherlands, and Poland, 2009 data for Cyprus, Ireland, Lithuania, Luxembourg, and Slovenia, and 2008 data for Cyprus and Estonia.

Similarly, most countries saw overall net creation of employment in ICT companies. However, in seven countries, namely Ireland, Hungary, Austria, Bulgaria, Portugal, Italy, and France, more

employment was destroyed than created by the process of companies entering and exiting the market.

Figure 8: Employment Associated with the Net Movement of ICT Companies in 2011.



Countries ordered by the net number of employed: number of employed in new companies minus the number of employed in exiting companies.
Denmark, Ireland, Poland, and Sweden do not report information for one service subsector: Education; human health and social work activities; arts, entertainment and recreation; other service activities.
Data 2011; except: 2010 data for Finland, France, the Netherlands, and Poland; 2009 data for Ireland, Lithuania, Luxembourg, Slovenia.
Cyprus: 2011 data for Births; 2010 data for Deaths.
Estonia: 2010 data for Births; 2009 data for Deaths.
No data available for Slovenia ICT company deaths.
Source: Eurostat Business demography statistics.

A few individual points:

- 15 countries saw a higher number of companies created than exiting and a positive associated number of people employed: Belgium, the Czech Republic, Denmark, Finland (2010 employment data), Germany, Latvia, Luxembourg (2009 employment data), Malta, the Netherlands (2010 employment data), Poland (2010), Romania, Slovakia, Spain, Sweden, and the U.K.
    - Poland created the third largest number of ICT companies (5,639) and the second largest employment from this net company increase (7,607). Poland experienced an increase in all three ICT subsectors.
    - The UK created the second highest number of companies (7,970) and employment from these companies (7,158); the increase in companies and employment was driven by service companies.
    - Romania had the highest net employment created per ICT net companies with 3.2 net employees per net company.
- Austria, Italy, Ireland (2009), and Portugal saw a decrease in the number of companies and in number of people employed by these companies.

    - Italy had the largest negative net number of companies and second largest negative net number of people employed by these companies. Each net company closure led to 3.95 net employment losses.
- France (employment data 2010), Bulgaria and Hungary saw more companies created than eliminated in 2011. However, the employment balance from these creations and destructions was negative.
    - France created 9,500 ICT companies in 2011 and 12,698 in 2010 (largest net gain for both years) but 4,108 jobs were destroyed in 2010.
    - Cyprus (employment data: 2011 Births/2010 Deaths) Estonia (employment data: 2010 Births/2009 Deaths) also had a positive net balance of ICT companies but a negative associated net employment in ICT companies. It is hard to draw conclusions because of the data limitations.
- In Lithuania, employment was created even though there was a net decrease in companies.

3.4. Analysis of Net Increase of Companies by Member State:

This section and the next one (3.5) analyse in more detail the data presented in Section 3.3. The data is analysed here by ICT subsectors.

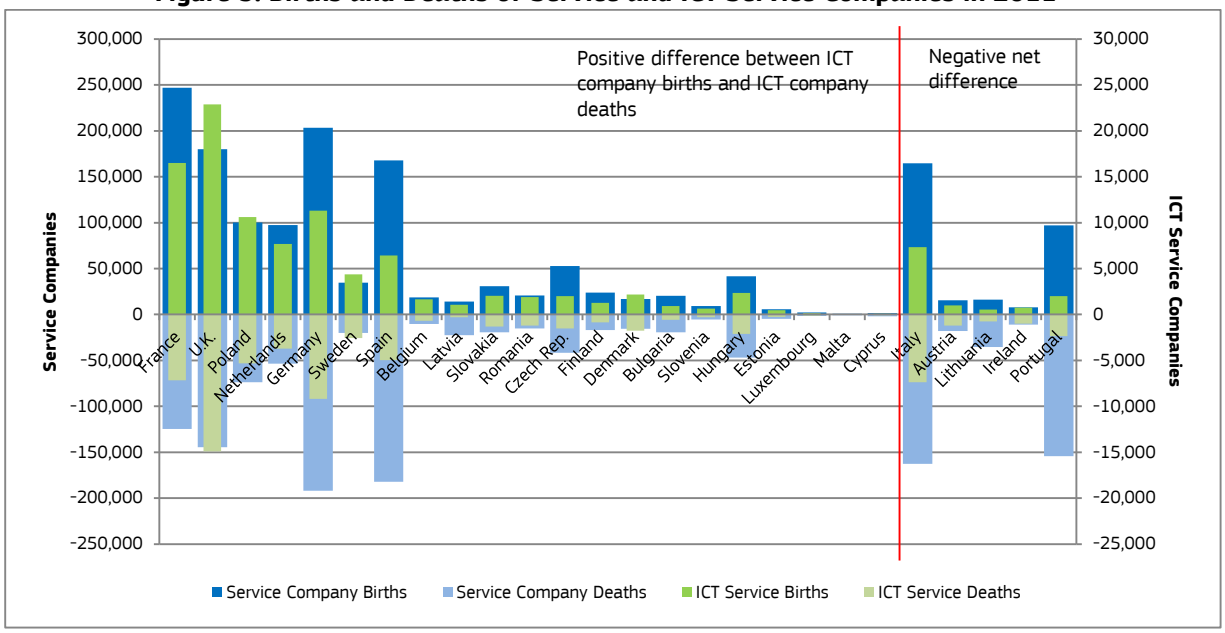
Focusing on the same 26 Member States, this section first delves into company births and deaths - also called 'company churning'. Both these phenomena taken together express the creation/ destruction process.

In 2011, services and ICT services experienced more creation than destruction. Manufacturing and ICT manufacturing companies experienced more destruction than creation. In general, wholesale companies experienced more creation than destruction, whereas ICT wholesale companies did not.

Service Companies: Driving the ICT and non-ICT Company Growth

Figure 9 presents the number of company births and deaths in services in 2011 for individual Member States. This figure shows the total number of service companies created (left scale) – including ICT service companies and independently it also shows the number of ICT service companies (right scale). Service companies, as discussed previously, do not include wholesale companies.

Figure 9: Births and Deaths of Service and ICT Service Companies in 2011



Number of Birth (positive) and Death (negative) of Service Companies (**Left Axis**) and ICT Service Companies (**Right Axis)**
Countries ordered by the net number of ICT service companies: number of company births minus the number of company deaths.
Denmark, Ireland, Poland, and Sweden do not report information for a service subsector: Education; human health and social work activities; arts, entertainment and recreation; other service activities.
Data 2011; except: 2010 data for Cyprus and Poland; 2009 data for Ireland.
Source: Eurostat Business demography statistics.

The countries are ordered using the net difference in number of ICT company births and deaths for 2011. The countries on the left hand side have created the highest number of ICT service companies. As we move to the right, this number decreases. To the left of the red line are the countries with a positive net difference and to the right are the countries with a negative net difference.

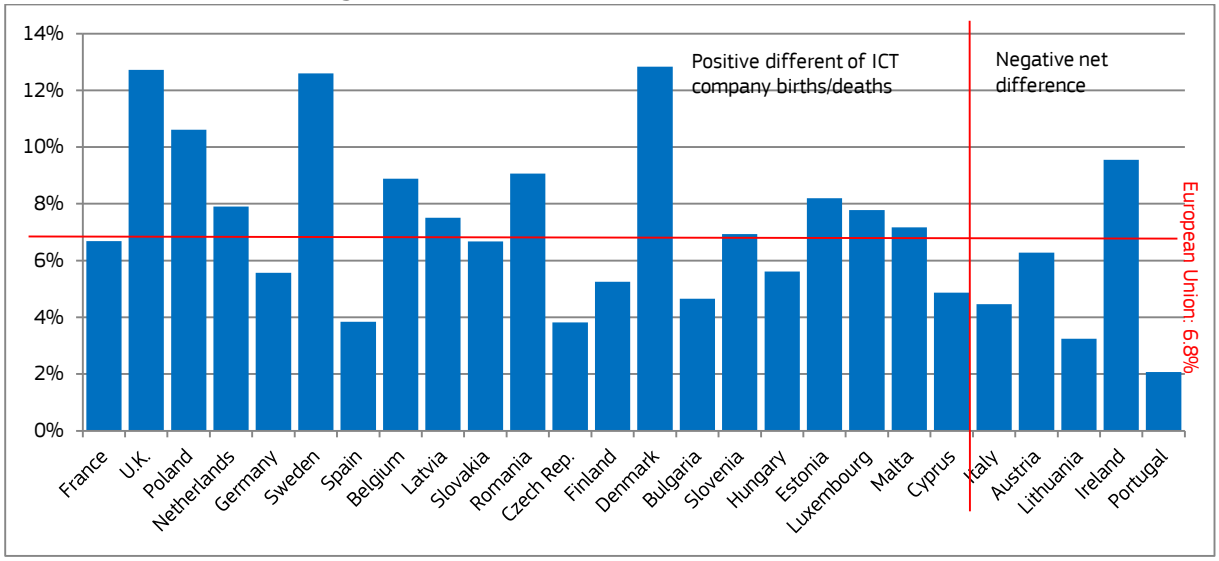
In Europe in 2011, more ICT service companies were created (108,234) than exited (71,509). About two thirds of ICT service company births compensate for ICT service company deaths. The remaining third increases the number of ICT service companies. In 21 countries, more ICT service companies were created than destroyed.

The rate at which company births replace company deaths varies greatly across individual countries. In 2011, new ICT service companies outnumbered exiting companies in Latvia by a factor of over three to one: for every exiting ICT service company, three new ICT service companies were created. At the other extreme, exiting ICT service companies outnumbered new ICT companies by a factor of four to three in Lithuania in 2011: for four exiting ICT service companies, three new ICT service companies were created.

Interestingly, Cyprus (2010), Hungary, Latvia, and Spain had, in general, more service company deaths than service company births but had more ICT service company births than deaths in 2011. Therefore, ICT service companies may exhibit different patterns than their non-ICT counterparts. This observation may signal a comparative advantage in ICT or a specialization in ICT services.

Since the Member States have different active company populations and economies, these absolute values may distort the relative importance of ICT to their individual economies. Figure 10 shows the share of new ICT services companies within the cohort of new service companies for individual Member States.

Figure 10: Share of New ICT Service Companies



Countries ordered by the net number of ICT service companies: number of company births minus the number of company deaths.
Denmark, Ireland, Poland, and Sweden do not report information for a service subsector: Education; human health and social work activities; arts, entertainment and recreation; other service activities.
Data 2011; except: 2010 data for Cyprus and Poland; 2009 data for Ireland.
Source: Eurostat Business demography statistics.

These relative figures show how important ICT is to individual economies. These relative rates offer some evidence that some countries either specialize in ICT services or have a comparative advantage in ICT:

- On average, 6.8% of new service companies are ICT service companies (also discussed in Section 3.1).
- Shares for individual countries vary between 2.1% in Portugal to 12.8% in Denmark.

For consistency, the countries are ordered by the net number of ICT service companies and also because looking at company creation may be misleading. For instance, Ireland was among the countries with the largest share of new ICT service companies as a function of new companies. However, Ireland also experienced a large number of company deaths in 2009 and it had the second lowest net number of companies.

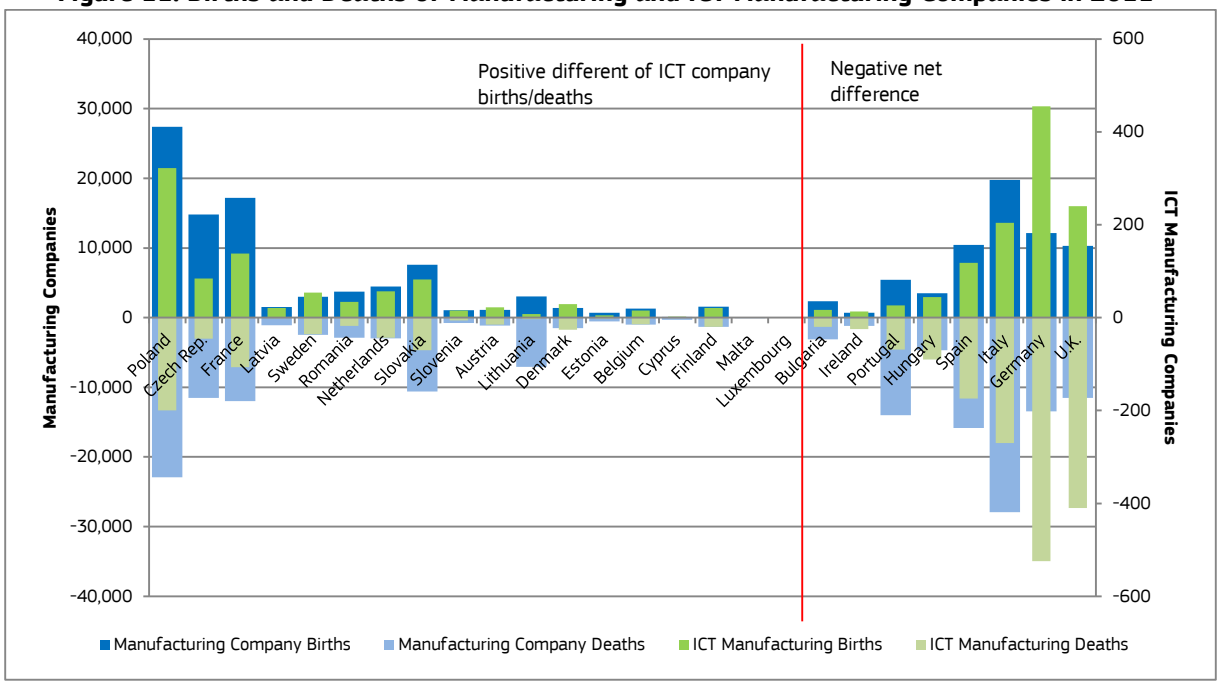
Except for Ireland, the other countries that have a negative net difference between company creation and company destruction also have fewer than the EU average number of new ICT service companies. Thus, the ICT sector is less important in these countries and is also shrinking: these countries may not specialize in ICT or may not have a comparative advantage.

Manufacturing Companies: Shrinking Number of Companies

Having looked at the service sector, we now turn to the manufacturing sector. Using the same model as Figure 9, Figure 11 shows the number of company births and deaths in 2011 for each Member State. It also shows the total number of manufacturing companies created and separately, the number of ICT manufacturing companies created. The countries are ordered by the net difference between ICT manufacturing company births and deaths.

Note the difference of scales between Figure 9 and Figure 11.

Figure 11: Births and Deaths of Manufacturing and ICT Manufacturing Companies in 2011



Number of Birth (positive) and Death (negative) of Manufacturing Companies (**Left Axis**) and ICT Manufacturing Companies (**Right Axis)**
Countries ordered by the net number of ICT manufacturing companies: number of company births minus the number of company deaths.
Data 2011; except: 2010 data for Cyprus and Poland; 2009 data for Ireland.
Source: Eurostat Business demography statistics.

While most countries experienced more ICT manufacturing company creation than exiting, in total, in Europe in 2011, more ICT manufacturing companies exited than entered the market. 162 more ICT manufacturing companies exited than were created; in other words, for the death of ten ICT manufacturing companies, only nine new ICT manufacturing companies were created.

For individual Member States, this net difference for manufacturing companies varies even more than the comparable difference for ICT service companies. At one extreme in Portugal, new ICT manufacturing companies outnumbered exiting ICT manufacturing companies by a two-to-five ratio in 2011: for five exiting ICT manufacturing companies, two new ICT manufacturing companies were created. At the other extreme in Latvia, ICT manufacturing company births outnumbered company deaths by a factor of twenty in 2011: for every ICT manufacturing company destroyed, twenty ICT manufacturing companies were created.

Member States, such as Germany and the UK, have negative net creation of manufacturing companies in general, and also have a negative balance of ICT manufacturing companies. In 2011, the ICT sector experienced the same patterns as the manufacturing sector in these countries.

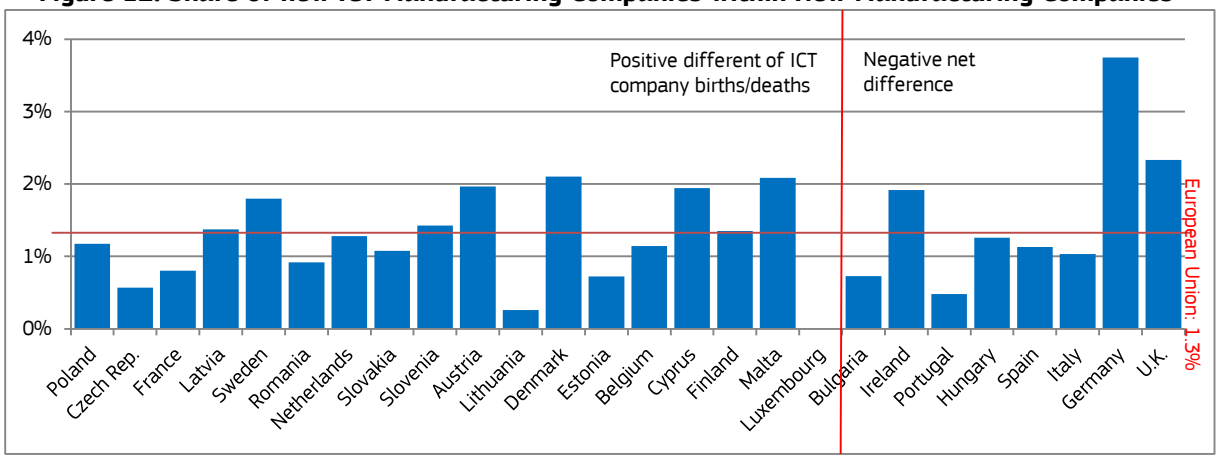
This contrasts starkly with ICT service companies. In services and ICT services, company creations outnumbered company destruction, but in manufacturing and ICT manufacturing, destructions outnumbered creations. Therefore, the number of manufacturing and ICT manufacturing companies decreased in 2011 in Europetates.

Figure 12 shows the share of new ICT manufacturing companies within the cohort of new manufacturing companies. For consistency, the countries are ordered by the same ICT manufacturing company net difference. These shares do not vary as greatly between countries as they did for ICT service companies:

- These shares ranged from 0.3% in Lithuania to 3.7% in Germany (aside from Luxembourg, where no ICT manufacturing companies were reportedly created).

- 1.3% of new manufacturing companies were ICT manufacturing companies in these European economies in 2011.
- Even though Poland had the largest net increase of ICT manufacturing companies, relative to its wider manufacturing industry, the share of new ICT companies remained smaller than the EU share. Poland may have a comparative advantage or is specializing in manufacturing.
- Germany had negative net creation of manufacturing and ICT manufacturing companies in 2011, though it had the highest percentage of ICT manufacturing companies.

Figure 12: Share of new ICT Manufacturing Companies within New Manufacturing Companies

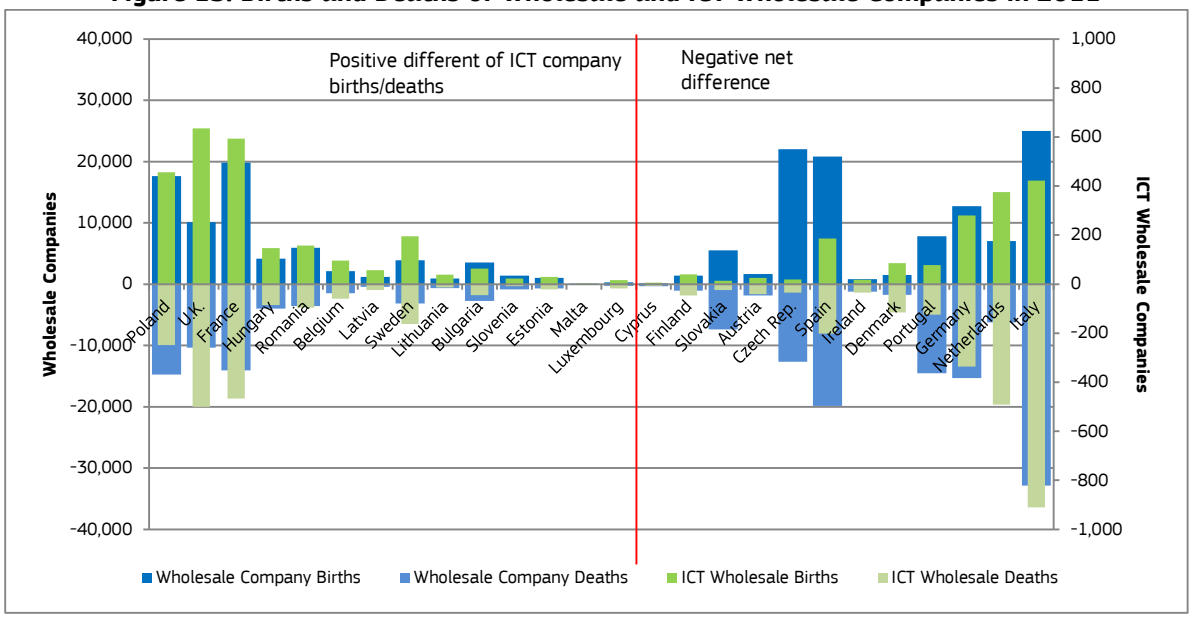


Countries ordered by the net number of ICT manufacturing companies: number of company births minus the number of company deaths.
Data 2011; except: 2010 data for Cyprus and Poland; 2009 data for Ireland.
Source: Eurostat Business demography statistics.

Wholesale Companies: Decreasing Number of Companies

Finally, this section looks at the wholesale sector, which is a subsector of the service industry but has been distinguished to allow us to draw further inferences. Figure 13 represents the number of wholesale company births and deaths in 2011 for individual Member States. This figure shows the total number of wholesale companies created and independently shows the number of ICT wholesale companies. The countries are ordered by their ICT wholesale company net difference.

Figure 13: Births and Deaths of Wholesale and ICT Wholesale Companies in 2011



Number of Birth (positive) and Death (negative) of Wholesale Companies (**Left Axis**) and ICT Wholesale Companies (**Right Axis)**
Countries ordered by the net number of ICT Wholesale companies: number of company births minus the number of company deaths.
Data 2011; except: 2010 data for Cyprus and Poland; 2009 data for Ireland.
Source: Eurostat Business demography statistics.

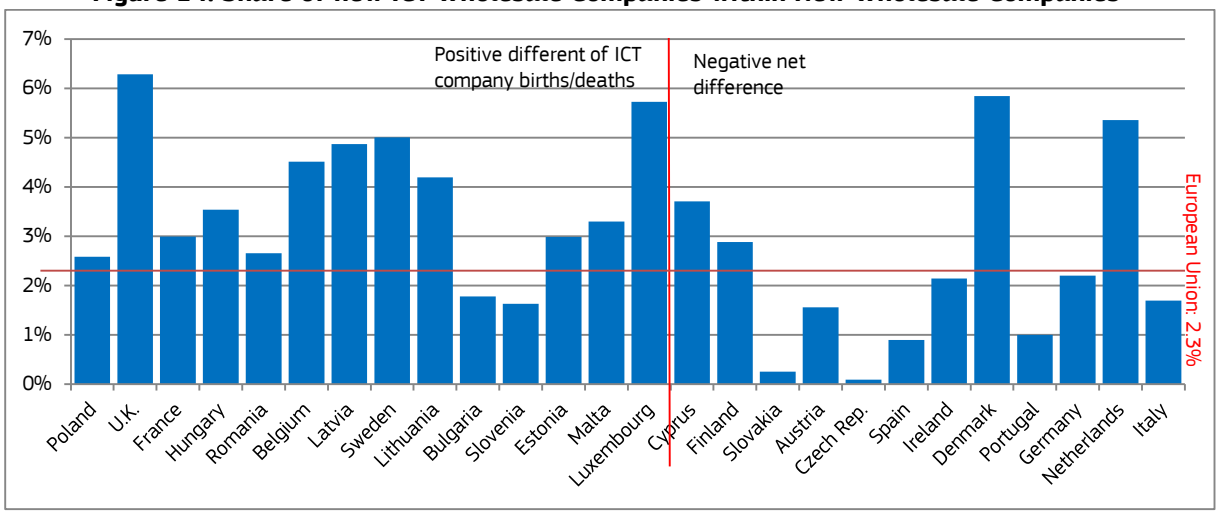
In over half of the countries, more ICT wholesale companies entered the market than exited. On average, however, more companies were destroyed than created in Europe in 2011. 55 more ICT wholesale companies exited than were created; and for almost every ICT wholesale company destroyed, one new ICT wholesale company was created. This contrasts with ICT service companies, of which ICT wholesale companies are a subsector.

Wholesale differs from both services and manufacturing. In wholesale in general, creation outpaced destruction whereas in ICT wholesale, destruction outpaced creation in 2011. In services and manufacturing, the ICT subsector reflected the general trend observed in the larger sector; however, ICT wholesale goes against the trend for wholesale in general. ICT wholesale may have expanded so much in previous years that further in the long run, companies exit because they are not competitive.

More European countries experience a negative net difference of ICT wholesale companies than they did for companies in ICT service and ICT manufacturing. For individual countries, this net change varies even more than the comparable rate for ICT service companies. At one extreme in Slovenia in 2011, new ICT wholesale companies outnumbered exiting ICT companies by a factor of three: for each exiting ICT wholesale company, three new ICT wholesale companies were created. At the other extreme in Italy in 2011, destruction of ICT wholesale companies outnumbered creation of companies by a two-to-one ratio: for every two ICT wholesale company destroyed, only one ICT wholesale companies was created.

Figure 14 shows the share of new ICT wholesale companies within the cohort of new wholesale companies. For consistency, the countries are ordered by the ICT wholesale company net difference.

Figure 14: Share of new ICT Wholesale Companies within New Wholesale Companies



Countries ordered by the net number of ICT Wholesale companies: number of company births minus the number of company deaths.
Data 2011; except: 2010 data for Cyprus and Poland; 2009 data for Ireland.
Source: Eurostat Business demography statistics.

Figure 14 shows that:

- These shares greatly vary between 0.1% in the Czech Republic in 6.3% in the UK.
- On average, 2.3% of new wholesale companies are ICT wholesale companies, which is much closer to the rate observed for ICT manufacturing than it is to the rate for ICT services.

3.5. Analysis by Member State of Employment in Newly-created Companies:

First, this section goes further into one aspect of births and deaths of companies: employment. When companies enter the market, they create employment whereas when they exit the market, they eliminate jobs. Therefore, this section investigates how employment is affected by this movement of companies.

In 2011, only ICT and non-ICT services added more jobs from company creation than they removed from company destruction in Europe. Yet, Member States greatly differ[12] when we compare them across sectors.

Net Employment from Service Companies: Increasing Employment

This section investigates how employment is affected by this movement of companies in the service industry and the ICT service subsector.

Figure 15 presents employment gains and losses due to service company births and deaths in individual Member States in 2011. This figure shows total employment gains and losses in new and exiting service companies on the left hand scale and on the right hand scales, it shows the

[12] This section uses mostly data for 2011 but when lacking, older data have been integrated. This section uses 2010 for Finland, France, the Netherlands, and Poland. It uses 2009 data for Ireland, and Luxembourg. It uses 2011 for Cyprus for the number of employed in newly created companies while it uses 2010 data for the number of employed in exiting companies because not all data is available for Cyprus for a given year. Similarly, it uses 2010 data for Estonia for the number of employed in newly created companies while it uses 2009 data for the number of employed in exiting companies. It uses 2009 data for Slovenia; however Slovenia did not report numbers for employment in exiting ICT companies in any available year.

number of employed in new and exiting ICT service companies. The countries are ordered by the net absolute number of jobs in new ICT service companies, which is the difference between the number of people employed in new ICT service companies and the number employed in exiting ICT service companies for 2011.

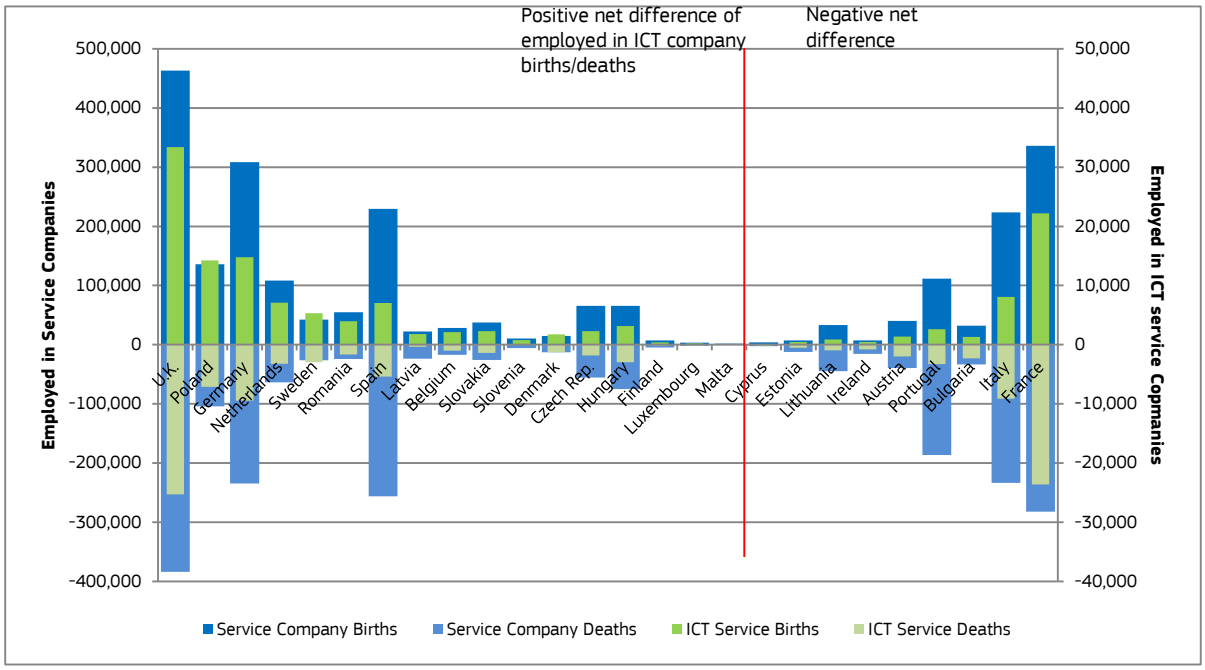
First, this figure shows that most countries created more jobs in new ICT service companies than exiting ICT service companies destroyed; although, Ireland, Austria, Portugal, Bulgaria, Italy, and France had a negative employment net difference when comparing new and exiting ICT service companies.

Second, comparing Figure 9 to Figure 15 shows that the number of people employed per company is comparable in new and exiting ICT service companies (1.5 employed in new ICT companies and 1.6 in exiting ICT companies). This may indicate that companies that were unable to grow and hire more employees are more likely to die. Alternatively, this may indicate that, after growing, companies will scale down to a minimum before they officially close down.

The net differences of employment caused by companies entering/exiting the market vary greatly from country to country. France experienced a net loss of 1,428 jobs whereas (in 2010) the UK experienced a net increase of 8,111 jobs in 2010. While France has the highest difference between the number of companies created and exiting (12,641 net balance of ICT service companies in 2010 and 9,342 in 2011), France also has the lowest difference for associated employment (-1,428 net balance for the associated number of employed in 2010).[13] This requires further investigation.

[13] For France, section 3.4 uses 2011 data for company creation whereas section 3.5 uses 2010 data for job creation; however, this analysis stands true when looking at 2010 data for both company and job creation: France has the largest ICT service company net difference and the lowest employment net difference.

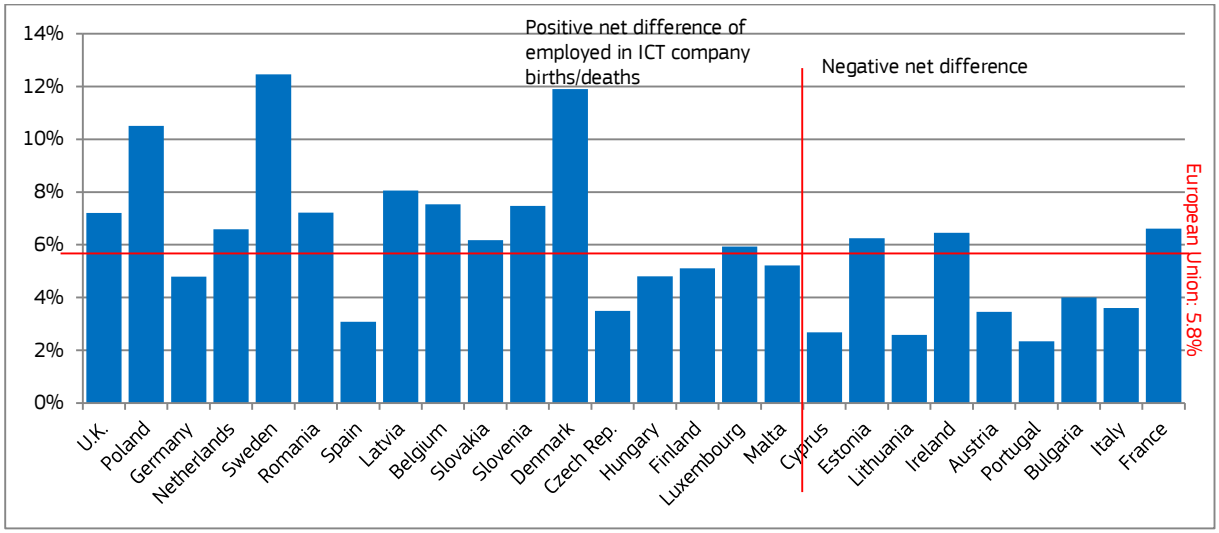
Figure 15: Employment Gains and Losses from Churned Service and ICT Service Companies in 2011



Number of Employed in New (positive) and Exiting (negative) Service Companies (**Left Axis**) and ICT Service Companies (**Right Axis)**
Countries ordered by the net number of employed in these ICT service companies: number of employed in new companies minus the number of employed in exiting companies.
Denmark, Ireland, Poland, and Sweden do not report information for a service subsector: Education; human health and social work activities; arts, entertainment and recreation; other service activities.
Data 2011; except: 2010 data for Finland, France, the Netherlands, and Poland; 2009 data for Ireland, Lithuania, Luxembourg, Slovenia.
Cyprus; 2011 data for Births; 2010 data for Deaths.
Estonia: 2010 data for Births; 2009 data for Deaths.
No data available for Slovenia ICT company deaths.
Source: Eurostat Business demography statistics.

Because these absolute values are affected by the size of national economies, Figure 16 shows the share of people employed in new ICT services companies within the cohort of employed in new service companies. For consistency, the countries are ordered by the difference between the number of people employed in new and exiting ICT service companies.

Figure 16: Share of Employment in New ICT Service Companies within the Employment Created by New Service Companies in 2011



Countries ordered by the net number of employed in these ICT Service companies: number of employed in new companies minus the number of employed in exiting companies.
Denmark, Ireland, Poland, and Sweden do not report information for a service subsector: Education; human health and social work activities; arts, entertainment and recreation; other service activities.
Data 2011; except: 2010 data for Finland, France, the Netherlands, and Poland; 2009 data for Ireland, Lithuania, Luxembourg, Slovenia.
Cyprus,; 2011 data for Births; 2010 data for Deaths.
Estonia: 2010 data for Births; 2009 data for Deaths.
No data available for Slovenia ICT company deaths.
Source: Eurostat Business demography statistics.

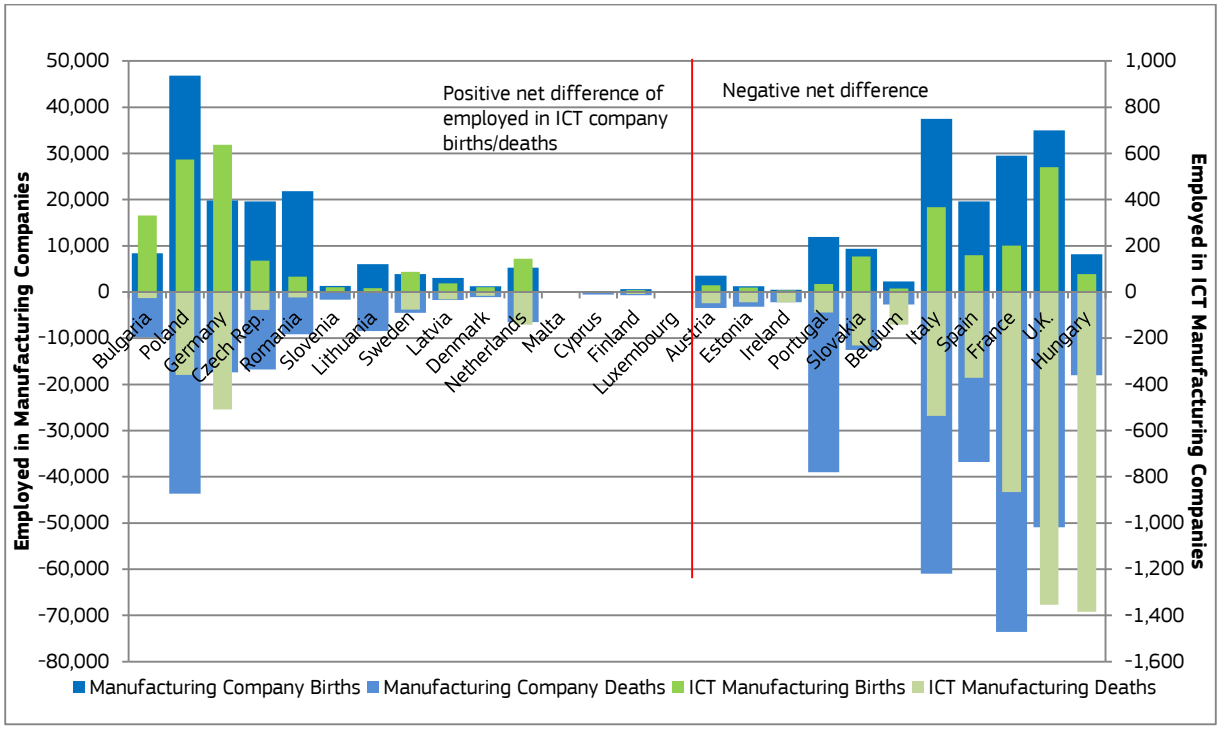
Figure 16 shows:

- On average, employment in ICT service companies represented 5.8% of employment in new service companies.
- The share of people employed in new EU ICT service companies is one point lower than the share new ICT service companies. Therefore, on average, the average ICT service company is smaller than the average non-ICT service company as discussed previously.
- These shares vary greatly from country to country: i.e. from 2.3% in Portugal to 12.5% in Sweden.

Net Employment from ICT Manufacturing Companies: Tightening Employment

This section looks at employment gain and loss in manufacturing and ICT manufacturing companies that were created and destroyed. Figure 17 presents the number of people employed in new and exiting companies in 2011 in individual Member States. It shows the total number of employment in new and exiting manufacturing companies on the left hand scale and on the right hand scale, it shows the number employed in new and exiting ICT manufacturing companies. The countries are ordered by the net difference in the number employed in new ICT manufacturing companies and the number employed in exiting ICT manufacturing companies in 2011.

Figure 17: Employment Gains and Losses from Churned Manufacturing and ICT Manufacturing Companies in 2011.



Number of Employed in New (positive) and Exiting (negative) Manufacturing Companies (**Left Axis**) and ICT Manufacturing Companies (**Right Axis)**

Countries ordered by the net number of employed in these ICT Manufacturing companies: number of employed in new companies minus the number of employed in exiting companies.

Data 2011; except: 2010 data for Finland, France, the Netherlands, and Poland; 2009 data for Ireland, Lithuania, Luxembourg, Slovenia. Cyprus,; 2011 data for Births; 2010 data for Deaths.

Estonia: 2010 data for Births; 2009 data for Deaths.

No data available for Slovenia ICT company deaths.

Source: Eurostat Business demography statistics.

First, like the number of manufacturing and ICT manufacturing companies, the number employed in exiting manufacturing and ICT manufacturing companies also outnumbered the number employed in new manufacturing and ICT manufacturing companies. Therefore, the fact that employment in new companies does not compensate for employment destroyed by exiting companies has contributed to the declining number employed in the manufacturing and ICT manufacturing sectors.

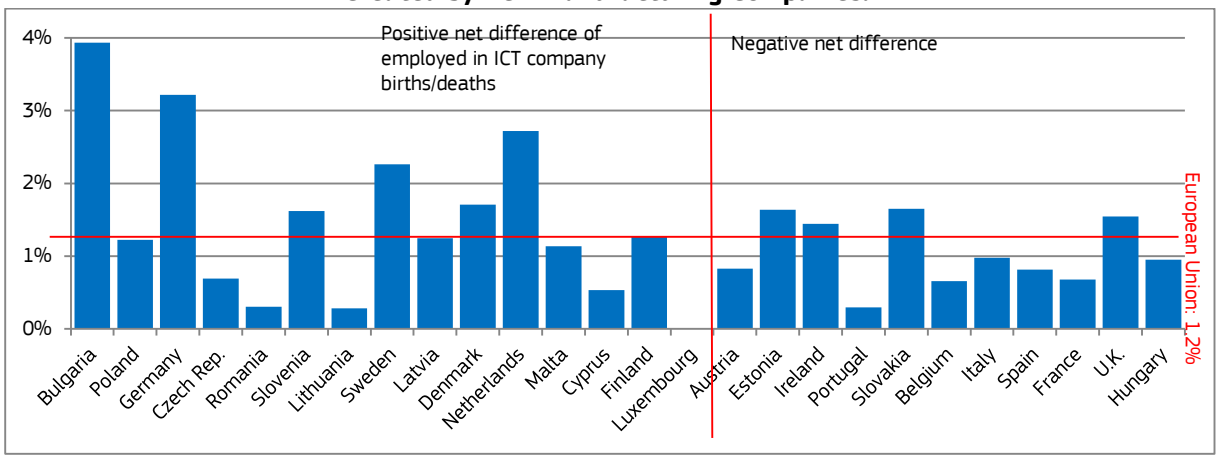
Second, 19 countries experienced a negative net balance in the manufacturing sector but only 11 countries experienced a negative net balance in ICT manufacturing sector. Even though ICT manufacturing, in general, has slowed down in Europe, it has not slowed down in as many countries as manufacturing. Yet, a negative balance in ICT manufacturing seems to correlate with a negative balance in manufacturing because most countries that experienced a negative balance in ICT manufacturing also experienced a negative net difference in manufacturing. This was not the case in the service industry.

The decrease in manufacturing and ICT manufacturing employment is also more widespread as compared to services and ICT services: only seven countries experienced a negative balance in services and only six experienced a negative balance in ICT services.

Third, individual Member States experienced different ICT manufacturing phenomena. On the one hand, Bulgaria has a negative net different for the employed in manufacturing company but had the largest positive balance in ICT manufacturing. Other countries in ICT manufacturing, such as Denmark, Latvia, Germany, the Czech Republic, Poland and Romania, had positive balances in both the manufacturing and ICT manufacturing sectors.

These absolute values may be misleading; hence, Figure 18 presents relative values. This figure shows the share of people employed in new ICT manufacturing companies within the cohort of those employed in new manufacturing companies. For consistency, the countries are ordered by the employment net difference between entering and exiting ICT manufacturing companies.

Figure 18: Share of Employment in New ICT Manufacturing Companies within the Employment Created by New Manufacturing Companies.



Countries ordered by the net number of employed in these ICT Manufacturing companies: number of employed in new companies minus the number of employed in exiting companies.
Data 2011; except: 2010 data for Finland, France, the Netherlands, and Poland; 2009 data for Ireland, Lithuania, Luxembourg, Slovenia.
Cyprus,; 2011 data for Births; 2010 data for Deaths.
Estonia: 2010 data for Births; 2009 data for Deaths.
No data available for Slovenia ICT company deaths.
Source: Eurostat Business demography statistics.

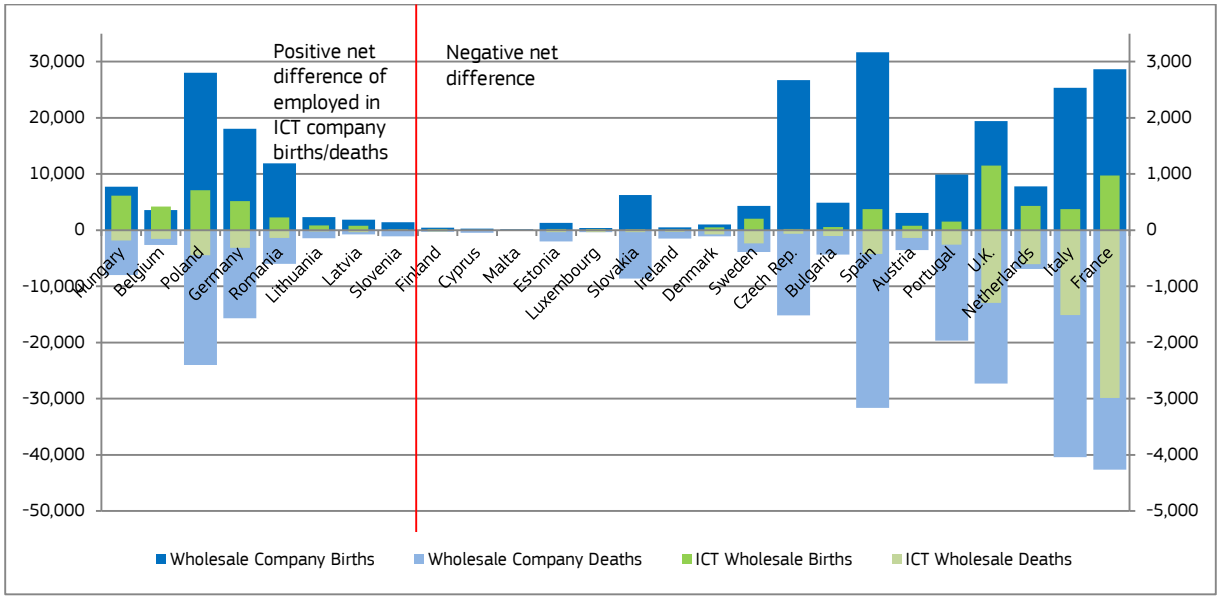
Figure 18 shows:

- People employed in new ICT manufacturing companies as a percentage of those employed in new manufacturing companies greatly differ between Member States: i.e. from 0% in Luxembourg to 3.9% in Bulgaria.
- The range of observed values is smaller for ICT manufacturing than it is for ICT services and so are the differences between countries.
- On average the share of employment in new ICT manufacturing is comparable to the share of new ICT manufacturing.
- no ICT manufacturing company creation was reported by Luxembourg in 2009 (no associated employment to analyse).

Net Employment from Wholesale Companies: Tightening Employment As Well

Finally, this section looks at the employment trends in wholesale and ICT wholesale. Figure 19 presents the number employed in entering and exiting companies in 2011 for individual Member States. This figure shows the total number employed in new and exiting wholesale companies on the left hand scale and the number employed in new and exiting ICT wholesale companies on the right hand scale. The countries are ordered by the net absolute number employed in new ICT wholesale companies.

Figure 19: Employment Gains and Losses from Churned Wholesale and ICT Wholesale Companies in 2011



Number of Employed in New (positive) and Exiting (negative) Wholesale Companies (**Left Axis**) and ICT Wholesale Companies (**Right Axis)**
Countries ordered by the net number of employed in these ICT Wholesale companies: number of employed in new companies minus the number of employed in exiting companies.
Data 2011; except: 2010 data for Finland, France, the Netherlands, and Poland; 2009 data for Ireland, Lithuania, Luxembourg, Slovenia.
Cyprus,; 2011 data for Births; 2010 data for Deaths.
Estonia: 2010 data for Births; 2009 data for Deaths.
No data available for Slovenia ICT company deaths.
Source: Eurostat Business demography statistics.

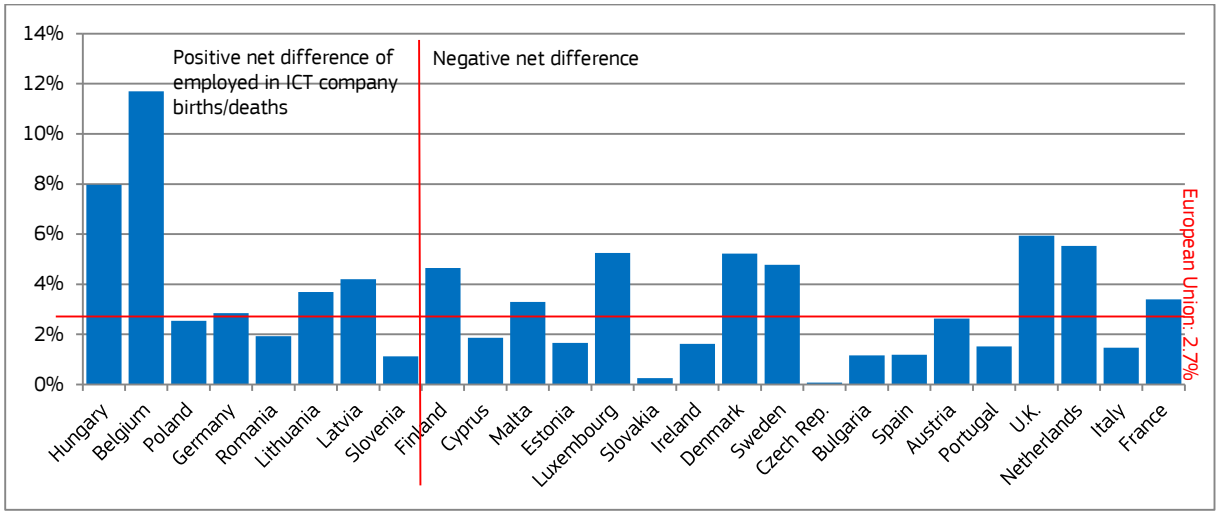
People employed in exiting wholesale companies and ICT wholesale companies outnumber those in entering companies and 18 Member States have a negative balance for their net employment in ICT wholesale. Only 12 Member States have a negative balance for wholesale. This is the only ICT subsector where fewer countries had a negative balance with regard to employment in new and exiting companies in its non-ICT counterpart than its ICT subsector.

In the UK and France (2010), a positive net balance of ICT wholesale companies (135 and 53 more ICT wholesale companies)[14] was associated with negative employment churning (139 and 2,015 fewer jobs).

Figure 20 shows the share of people employed in new ICT wholesale companies within the cohort of people employed in new wholesale companies. For consistency, the countries are ordered by the net difference between entering and exiting ICT wholesale companies.

[14] France created 127 more companies in 2011 and 53 more in 2010. Focusing on 2010 because only 2010 employment numbers are available: 53 more companies lead to 2,015 fewer jobs in 2010 in France in ICT wholesale.

Figure 20: Share of Employment in New ICT Wholesale Companies within the Employment Created by New Wholesale Companies.



Countries ordered by the net number of employed in these ICT Wholesale companies: number of employed in new companies minus the number of employed in exiting companies.
Data 2011; except: 2010 data for Finland, France, the Netherlands, and Poland; 2009 data for Ireland, Lithuania, Luxembourg, Slovenia.
Cyprus,; 2011 data for Births; 2010 data for Deaths.
Estonia: 2010 data for Births; 2009 data for Deaths.
No data available for Slovenia ICT company deaths.
Source: Eurostat Business demography statistics.

Figure 20 shows:

- In these European economies, 2.7% of those employed in new wholesale companies are in ICT wholesale companies.
- This average is half a point higher than the fraction of new wholesale companies that are ICT wholesale companies.
- The shares vary from 0.1% in the Czech Republic to 11.7% in Belgium.

Key Findings:

To conclude:

- New ICT service companies represented 94.7% of all new ICT companies in 2011.
- Share of the active population employed by the ICT sector grew from 2008 to 2011 in spite of the economic crisis, thanks to the numbers employed in ICT service companies.
- The ICT sectors employed a larger share of employed individuals in Europe:
    - ICT service companies employed an increasing number of individuals: ICT service also employed an increasing share of individuals in active and new companies.
    - ICT wholesale and ICT manufacturing employment stagnated or decreased.
- Employment in new manufacturing and ICT manufacturing companies does not compensate for employment destroyed due to exiting companies: this has contributed to the declining number of manufacturing jobs in both manufacturing overall and ICT manufacturing.

4. Survival Rate of Companies

This section looks at the survival rates of companies in ICT and non-ICT services, manufacturing, and wholesale. On the one hand, ICT service and wholesale companies have higher survival rates than their non-ICT counterparts. ICT manufacturing companies, on the other hand, have lower survival rates than their non-ICT counterparts.

Table 3 shows the survival rate of companies by subsector. Each column shows the percentage of companies created in a given year that survived after one to five years. For example, of the ICT service companies created in 2008, 88% survived to 2009, 73% survived to 2010, and 61% survived to 2011.

Because of limited data availability, this table shows survival rate for companies created in 2004 through to 2010 and aged from one to five years.

4.1. Service Industry Survival Rates

Services drive the economies of most European countries. As discussed in the previous section, many companies are created but they also exit in large numbers. This section looks at how many survive. The first tier of Table 3 shows the survival rates of service and ICT service companies.

Non-ICT service companies:

First, for a given year of creation, survival rates decrease in a hyperbolic way: the decrease is faster at the start and then slows down. Survival rates decrease by an average 11 points per year. In the fifth year of a service company cohort's life, less than half survive.

Second, most columns exhibit comparable numbers for older cohorts; but, younger cohorts (post-2008) have a higher gap between each year and between each other. The financial crisis seems to have impacted survival rates and particularly younger companies where the survival rate gap is larger.

ICT service companies:

First, ICT service companies exhibit patterns similar to non-ICT service companies. Survival rates decrease in a hyperbolic way at an average pace 11 percentage points per year. The survival rates of older cohorts also decrease at a slower pace than younger cohorts.

Second, comparing the survival rates of non-ICT service and ICT service companies shows that ICT service companies have a better survival rate than their non-ICT counterparts. The ICT service company survival rate is four percentage points greater on average than non-ICT service companies.

4.2. Manufacturing Industry Survival Rates

The second tier of Table 3 shows the survival rates of non-ICT and ICT manufacturing companies. This table shows that the survival rate for ICT manufacturing companies is (on average) 3 percentage points lower than non-ICT manufacturing companies.

Survival rates of manufacturing and ICT-manufacturing companies differ from the survival rate of service and ICT-service companies in two respects. First, older cohorts do not have a substantially higher chance of survival than younger cohorts for manufacturing companies and particularly for ICT manufacturing companies the same age. The survival rates for ICT manufacturing companies of the same age vary less than those of service companies over the period investigated. Survival rates for manufacturing and ICT manufacturing companies decrease on average 10 percentage point per year.

Second, survival rates for ICT service companies are also higher on average than those of ICT manufacturing companies by almost two percentage points.

	Year of Creation of Companies						
Years After Companies Started	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
	Service Companies (Without ICT Companies)						
1				85%	81%	83%	81%
2			70%	70%	66%	67%	
3		60%	58%	57%	55%		
4	53%	51%	50%	49%			
5	46%	45%	44%				
	ICT Service Companies						
1				90%	89%	85%	84%
2			75%	77%	74%	70%	
3		63%	63%	63%	62%		
4	54%	54%	53%	54%			
5	47%	47%	46%				
	Manufacturing Companies (Without ICT Companies)						
1				88%	85%	84%	86%
2			74%	75%	70%	71%	
3		64%	63%	62%	60%		
4	57%	56%	54%	54%			
5	51%	50%	48%				
	ICT Manufacturing Companies						
1				86%	81%	84%	83%
2			73%	73%	66%	71%	
3		60%	62%	60%	56%		
4	52%	51%	53%	50%			
5	47%	44%	47%				
	Wholesale Companies (Without ICT Companies)						
1				83%	83%	81%	82%
2			68%	67%	67%	66%	
3		58%	57%	55%	55%		
4	51%	50%	48%	47%			
5	45%	43%	42%				
	ICT Wholesale Companies						
1				87%	88%	86%	88%
2			74%	74%	74%	71%	
3		64%	62%	62%	64%		
4	58%	56%	53%	54%			
5	51%	48%	47%				

19 EU countries included: Austria; Bulgaria; Czech Republic; Estonia; Finland; France; Germany; Hungary; Italy; Latvia; Luxembourg; Netherlands; Poland; Portugal; Romania; Slovakia; Slovenia; Sweden; United Kingdom.
France, Poland, and Sweden not data on Education; human health and social work activities; arts, entertainment and recreation; other service activities.
Source: Eurostat Business demography statistics

Table 3: Survival Rates of Companies By Subsector

4.3. Wholesale Subsector Survival Rates

Wholesale and ICT wholesale companies resemble service and ICT service companies in many respects. The third tier of Table 3 shows the survival rates of non-ICT wholesale and ICT wholesale companies. First, the survival rate of ICT-wholesale companies is greater than that of non-ICT wholesale companies for a given cohort at a given age by six percentage points.

Second, the survival rate for non-ICT wholesale companies decreases on average by 11 percentage points per year, whereas that of ICT wholesale companies decreases on average by 10 percentage points per year. Unlike the broader service industry, the survival rates of non-ICT wholesale and ICT-wholesale do not exhibit any patterns (when we compare older to younger cohorts).

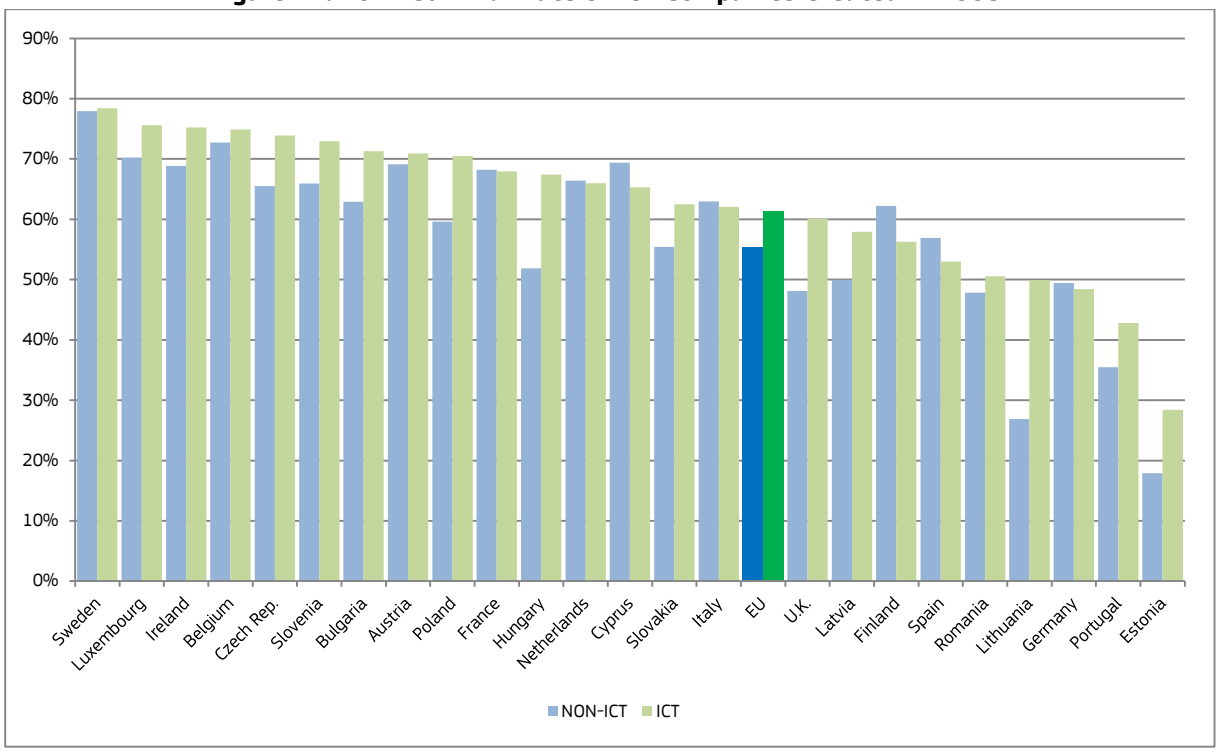
The survival rate for ICT wholesale companies is, on average, about one percentage point higher than that of ICT service companies and about three percentage points higher than that of ICT manufacturing companies.

4.4. Three Year Survival Rate and Member State Comparison

As discussed in Sections 3.3 and 3.5, Member States diverge in many ways. Some Member States have large and growing manufacturing and ICT manufacturing sectors while in others, these manufacturing sectors are shrinking. Unsurprisingly, the survival rates of companies also vary greatly from country to country.

Figure 21 presents the survival rates for ICT and non-ICT companies created in 2008 and that survived three years to 2011. For most countries and for the European Union, ICT companies have a higher likelihood of surviving to three years than non-ICT companies.

Figure 21: 2011 Survival Rate of ICT Companies Created in 2008



3 year survival rate of companies created in 2007 data for Ireland. See Table 4 column 1 and 2.
Ordered from the highest to the lowest survival rate of ICT companies.
Source: Eurostat Business demography statistics.

Table 4 presents in more detail the survival rates of companies created in 2008 that survived three years to 2011 by sector and by country. It shows the disparities between countries: for example, in the ICT sector, the survival rate varies from 28% to 78%. Specifically, Estonia has the lowest survival rate (28%) of the available countries in every sector. This means that three out of every

four companies ICT companies created in 2008 in Estonia did not survive to 2011. At the other end of the spectrum, ICT companies in Sweden have a survival rate of 78%. This means that three out of every four companies created in 2008 survived to 2011.

Country	Non ICT	ICT	Services (No ICT Services)	ICT Services	Manufacturing (No ICT Manufacturing)	ICT Manufacturing	Wholesale (No ICT Wholesale)	ICT Wholesale
***EU*[3]**	*55%*	*61%*	*55%*	*61%*	*59%*	*56%*	*56%*	*64%*
Austria	69%	71%	68%	71%	81%	45%	69%	73%
Belgium	73%	75%	73%	75%	74%	80%	71%	73%
Bulgaria	63%	71%	62%	72%	65%	52%	64%	68%
Cyprus	69%	65%	68%	64%	79%	*No Companies Creation Reported*	69%	75%
Czech Rep.	66%	74%	66%	75%	69%	72%	62%	46%
Estonia	18%	28%	15%	29%	23%	18%	43%	33%
Finland	62%	56%	62%	56%	65%	60%	58%	50%
France[1]	68%	68%	70%	67%	72%	76%	58%	77%
Germany	49%	48%	49%	48%	51%	50%	47%	54%
Hungary	52%	67%	51%	68%	58%	56%	52%	57%
Ireland[2]	69%	75%	69%	76%	69%	67%	70%	65%
Italy	63%	62%	63%	62%	65%	65%	60%	68%
Latvia	50%	58%	49%	58%	54%	67%	53%	59%
Lithuania	27%	50%	26%	47%	20%	45%	70%	88%
Luxembourg	70%	76%	70%	76%	60%	*No Companies Creation Reported*	73%	70%
Netherlands	66%	66%	67%	66%	70%	56%	59%	62%
Poland[1]	60%	70%	60%	71%	58%	71%	61%	66%
Portugal	35%	43%	35%	42%	50%	38%	37%	59%
Romania	48%	51%	50%	50%	44%	54%	44%	51%
Slovakia	55%	63%	57%	63%	54%	58%	54%	71%
Slovenia	66%	73%	66%	73%	72%	56%	63%	85%
Spain	57%	53%	57%	53%	59%	50%	58%	55%
Sweden[1]	78%	78%	57%	79%	78%	84%	72%	72%
U.K.	48%	60%	47%	60%	55%	51%	54%	56%

[1] no data on education, etc.
[2] companies created in 2007 that survived to 2010
[3] only uses 2011 data but includes 23 EU countries (no data for Denmark and Malta; Ireland excluded) – some countries not included in Table 3
Source: Eurostat Business demography statistics

Table 4: 2011 Survival Rate of ICT Companies Created in 2008

The three-year survival rates of ICT service companies created in 2008 vary from 29% (Estonia) to 79% (Sweden) with an average of 61%. The survival rate for ICT service companies created in 2008 was higher in 2011 by six percentage points than it was for non-ICT service companies of the same age.

On the other hand, the survival rate for ICT-manufacturing companies created in 2008 is three points lower than that of non-ICT manufacturing companies of the same age, as described above. The three-year survival rates of ICT manufacturing companies created in 2008 vary from 18% (Estonia) to 84% (Sweden) with an average of 56%. ICT-manufacturing has the widest range of survival rates.

For ICT wholesale companies, survival rates vary from 33% (Estonia) to 85% (Slovenia) with an average of 64%. The survival rate for ICT-wholesale companies created in 2008 is eight points higher in 2011 than that of non-ICT wholesale companies of the same age, as described above.

Key Findings:

To conclude:

- New ICT companies are more likely to survive than new non-ICT companies.
- On average, ICT service and ICT wholesale companies are more likely to survive than non-ICT service and wholesale companies.
- On average, ICT manufacturing companies are less likely to survive than non-ICT manufacturing companies.

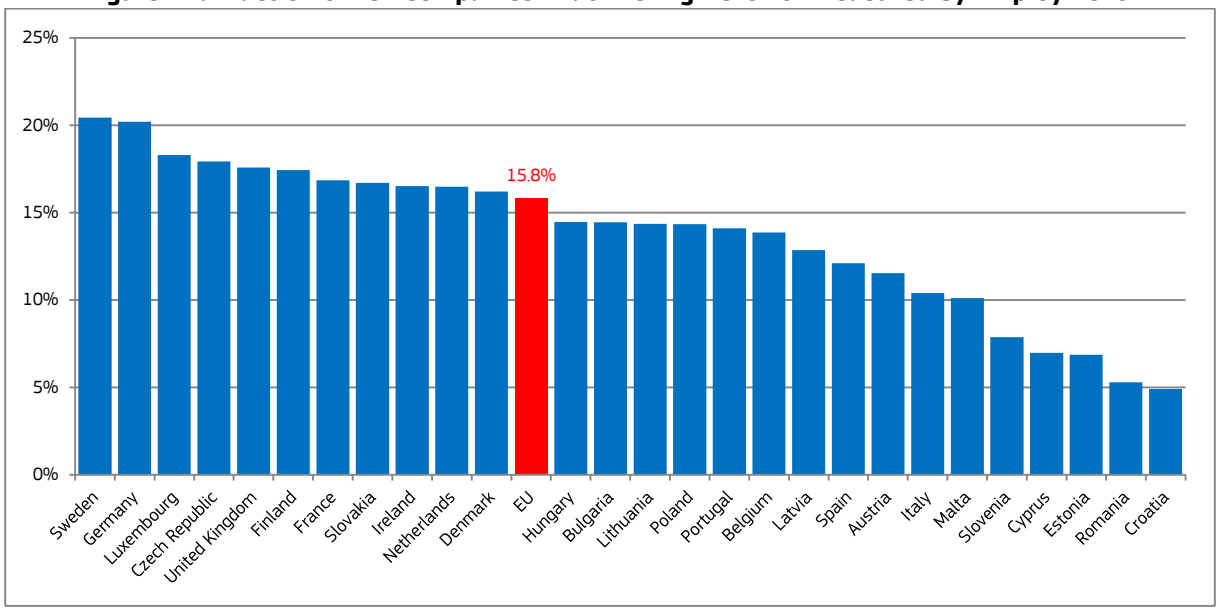
5. High Growth Companies

Eurostat defines high-growth companies as those that have at least ten employees and whose average growth rate has been greater than 10% over the last three years. Note that OECD, and previously Eurostat, define high-growth companies differently.[15] This dataset contains data for 27 Member States (all 28 Member States except Greece).

Figure 22 shows the ratio of 2012 ICT companies that are high growth as a function of active ICT companies in 2012 (except for Finland, which uses 2012 high growth companies and 2011 active companies). This Figure shows 27 countries for which any subsector data is available (detailed in Figure 23).

In the countries analysed, the average rate is 15.8%. This means that on average, for these 27 countries, over one in every seven ICT companies is a high-growth company.

Figure 22: Fraction of ICT Companies That Are High Growth Measured by Employment



High growth companies are companies with 10 or more employees and 10% or more growth as measured by employment over at least 3 years

2012 data; Finland uses 2012 for the number high growth companies but uses 2011 for the number of active companies.

Average takes in consideration the countries in this table – different sample than in Table 2

Source: Eurostat Business demography statistics – High growth enterprises (growth by 10% or more) and related employment by NACE Rev. 2

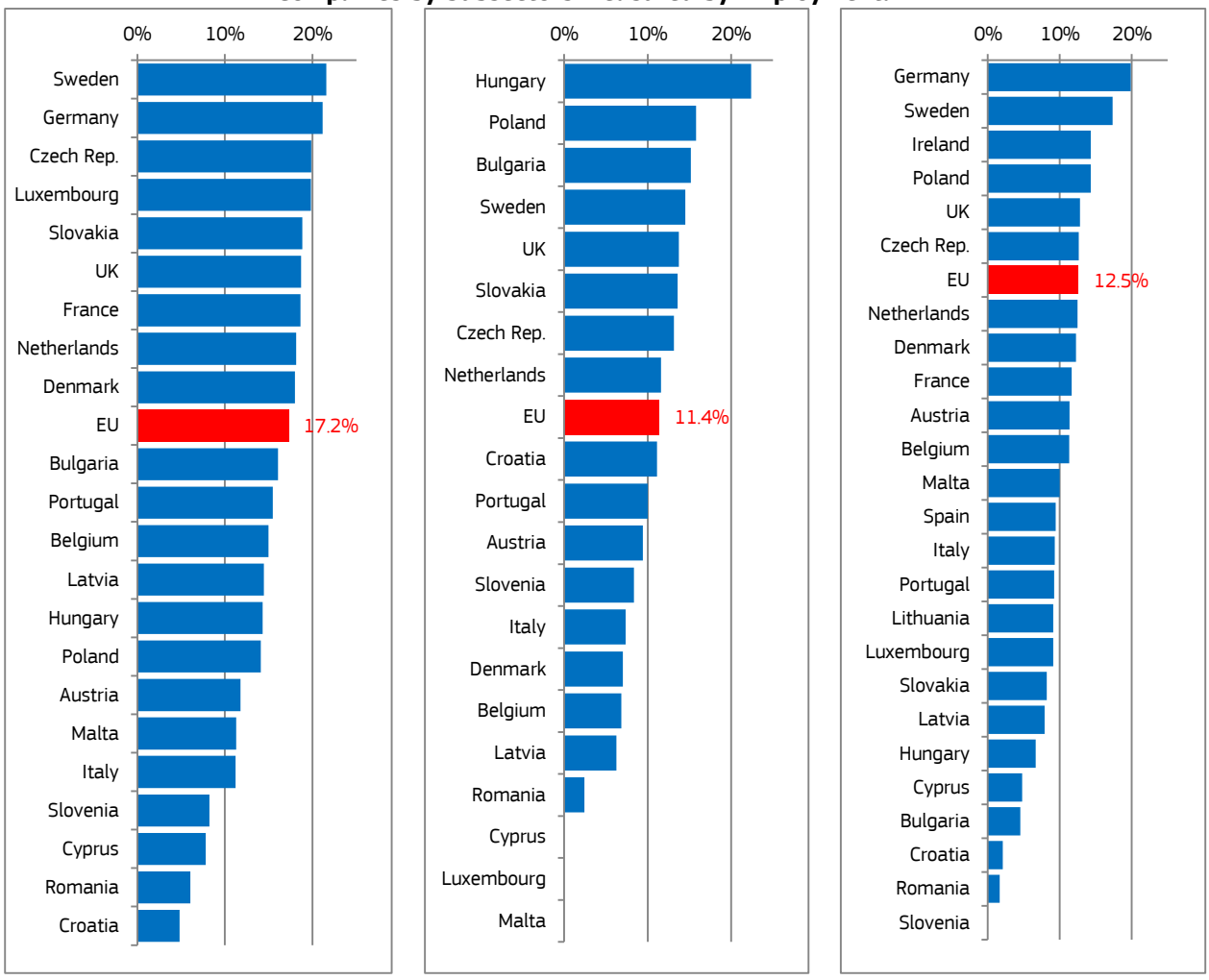
The 15.8% EU average underestimates the true high growth ICT-to-non-ICT ratio because of missing data. The ratio results from dividing high growth ICT companies by ICT companies: the dataset sometimes fail to provide the number of high growth companies for the ICT subsectors but always contain the information on the number of active companies; hence, the ratio underestimate the true high-growth-ICT to active-ICT ratio.

[15] The Organisation for Economic Co-operation and Development (OECD) defines high-growth firms as firms with 10 or more employees that have average annualized growth greater than 20 percent per year over a 3-year period, as measured by employment levels or employee turnover. OECD, *Entrepreneurship at a Glance 2012,* OECD Publishing, (2012). http://www.oecd-ilibrary.org/content/book/entrepreneur_aag-2012-en The OECD definition reflects the Eurostat-OECD Manual on Business Demography Statistics (Eurostat/OECD, 2007). In a previous database entitled Indicators of the EIP - entrepreneurship indicators programme (from 2008 onwards, NACE Rev. 2) (bd_9n_r2), Eurostat used 20%; however, in this database, Eurostat defines "High growth enterprises as growth by 10% or more [measured by] related employment." http://epp.eurostat.ec.europa.eu/portal/page/portal/european_business/data/database

Figure 23 shows this same ratio of 2012 ICT companies that are high growth within the cohort of 2012 ICT companies by ICT subsector. Unfortunately, because of the limited data, ratios for all country-sector combinations are not available and some inconsistencies may appear in the results. For instance, high-growth rate of ICT service and wholesale companies are presented for Germany in Figure 23 but no data is available for ICT manufacturing in Germany. The ratio for Germany is presented in Figure 22; as such, the true ratio for Germany's ICT sector is likely higher because not all high growth companies are counted while all active companies are included.

Figure 23 shows that the ratio of high-growth ICT service companies is larger than that of ICT manufacturing and ICT wholesale companies. Therefore, not only are ICT service companies increasing faster, but a higher ratio of companies is also becoming high-growth companies.

Figure 23: Fraction of 2012 ICT Companies That Are High Growth with Respect to 2011 Cohort of Companies by Subsectors Measured by Employment.



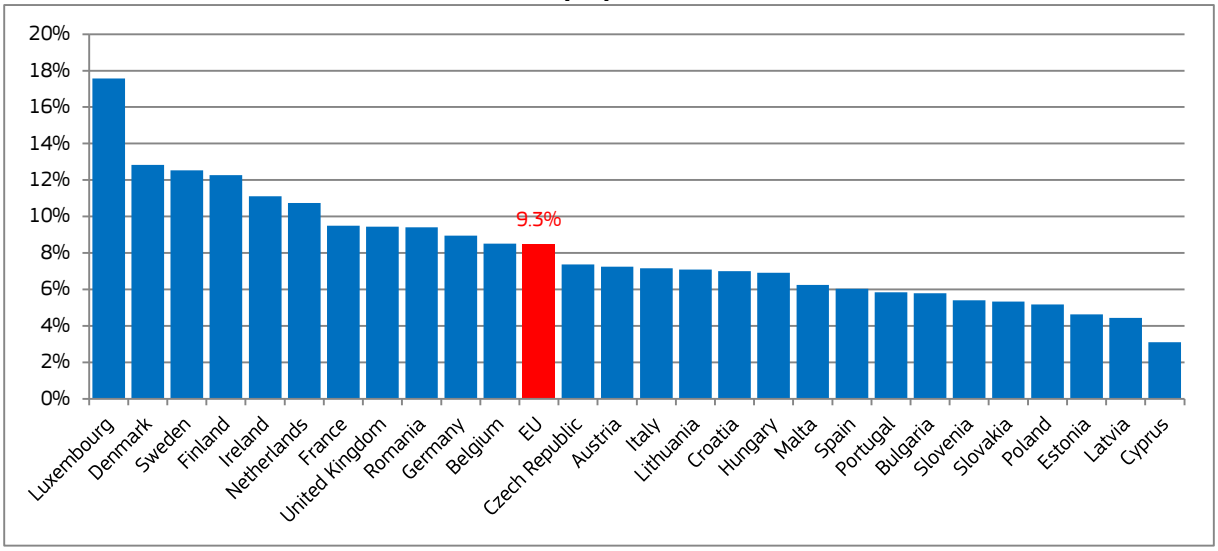
ICT Services **ICT Manufacturing** **ICT Wholesale**

High growth companies are companies with 10 or more employees and 10% or more growth as measured by employment over at least 3 years
2012 data.
Averages only take in consideration the countries in each table.
Source: Eurostat Business demography statistics – High growth enterprises (growth by 10% or more) and related employment by NACE Rev. 2

Figure 24 shows the ratio of high-growth ICT companies (i.e. the number of high growth ICT companies in a country divided by the total number of high-growth companies in that country) in 2012 in 18 EU Member States. Figure 24 shows countries for which data is available for any ICT subsectors. The other eight countries did not report data for one or more ICT subsectors.

All these countries have some ICT companies that are high growth, though some may not have high-growth companies in manufacturing or other sectors of the economy. The ratio of high-growth ICT companies in the countries in Figure 22 varies between 3.1% in Cyprus to 17.6% in Luxembourg.

Figure 24: Fraction of High-Growth Companies That Are ICT Companies in 2012 Measured by Employment.



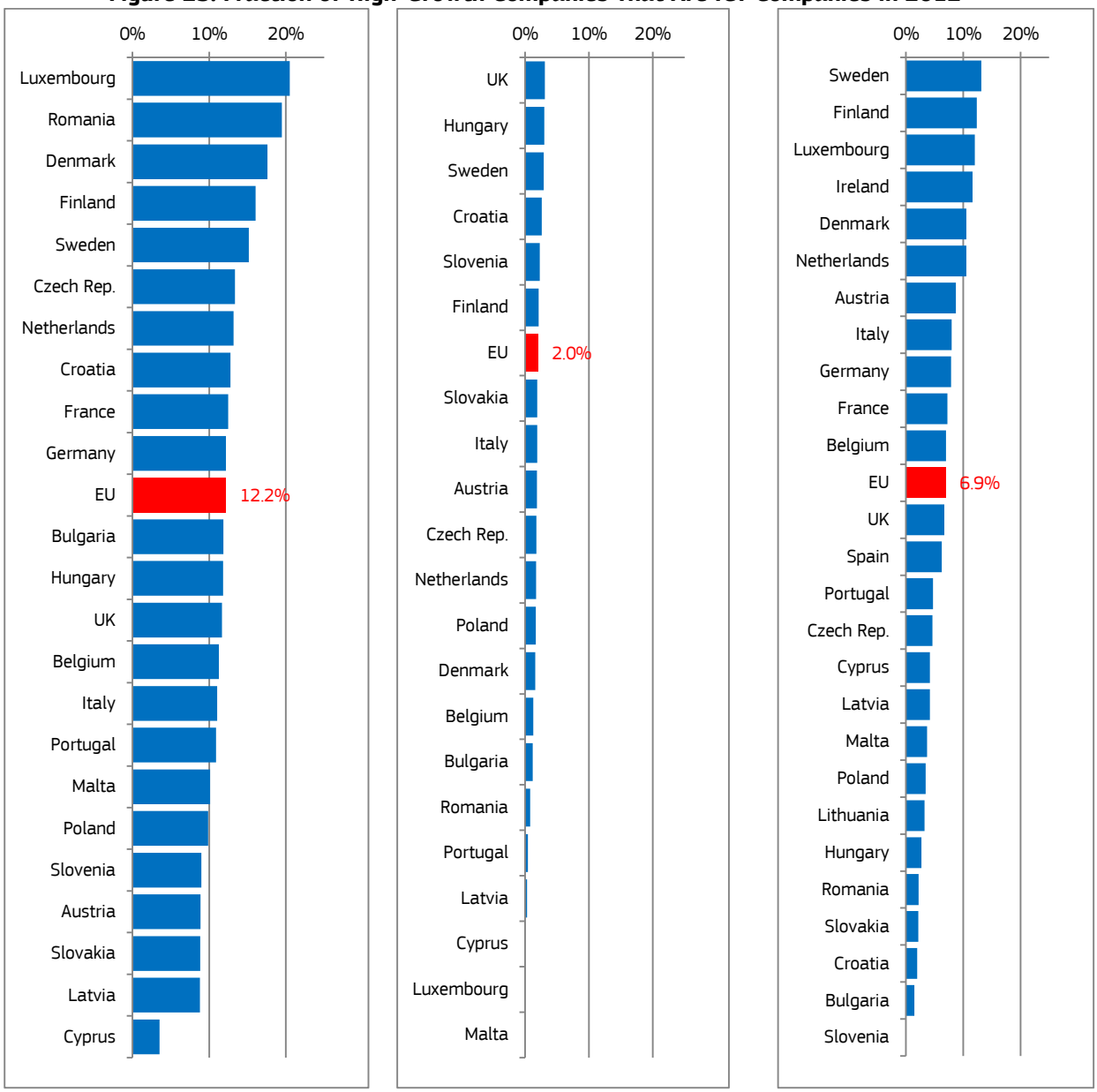
High growth companies are companies with 10 or more employees and 10% or more growth as measured by employment over at least 3 years
EU only uses the data from the countries in this table.
ICT subsector uses the Nace Rev 2 sectors defined in Table 6 of the Annex
Source: Eurostat Business demography statistics – High growth enterprises (growth by 10% or more) and related employment by NACE Rev. 2

On average, the ratio of high growth companies that are ICT companies is 9.3%. This ratio is larger than the ratio of new companies that are ICT companies of 4.6% (see Section 3.1 of the report). Therefore, a greater fraction of ICT companies become high-growth companies than non-ICT.

Note Figure 24, much like Figure 22, present a 9.3% EU average that underestimates the true high growth ICT-to-non-ICT ratio because of missing data. The ratio results from dividing high growth ICT companies by high growth companies: the dataset always contains the number of high growth companies for the aggregated economic sectors but sometimes fail to provide the number of high growth companies for the ICT subsectors; hence, the ratio underestimate the true high growth ICT-to-non-ICT ratio.

Figure 25 shows the details by subsectors: it shows the ratio of high-growth companies that are in each ICT subsector measured by employment.

Figure 25: Fraction of High-Growth Companies That Are ICT Companies in 2012



ICT Services **ICT Manufacturing** **ICT Wholesale**

High-growth companies are companies with 10 or more employees and 10% or more growth as measured by employment over at least 3 years

Each EU level uses the data from the countries in each graph.

Source: Eurostat Business demography statistics – High growth enterprises (growth by 10% or more) and related employment by NACE Rev. 2

For each individual economic subsector, the average ratios of high-growth companies that are ICT companies are higher than the ratio of active ICT companies to active companies:[16]

- 12.2% of high growth service companies are ICT service companies while 5.5% of service companies are ICT service companies;
- 2.0% of high-growth manufacturing companies are ICT manufacturing companies while 1.3% of manufacturing companies are ICT manufacturing companies;

[16] Note that this comparison ignores that the covered countries are different in section 3.1 and here.

- 6.9% of high-growth wholesale companies are ICT wholesale companies while 3.3% of wholesale companies are ICT wholesale companies.

This shows that ICT companies are more likely to be high growth than non-ICT companies.

These rates also vary greatly between countries: in ICT services, they vary from 3.5% in Cyprus to 20.5% in Luxembourg; in ICT manufacturing, from 0% in Malta[17] to 3.1% in the United Kingdom; in ICT wholesale, from 0% in Slovenia to 13.2% in Sweden. Note that Figure 25 includes fewer countries than Figure 24 because Figure 25 only includes countries for which *all* subsectors of each ICT subsector are available: this effort to be complete may lead to inconsistencies when reading the EU level.

Countries that have a high growth rate, above the EU level for ICT services, also have a high growth rate above the EU level for ICT companies in general. ICT services drive the ICT high-growth engine in most EU countries and at the EU level as well.

Key Findings

To conclude:

- Over one in seven EU ICT companies is a high-growth company.
- A greater fraction of ICT companies are high-growth companies than non-ICT companies.
- A greater fraction of ICT services companies are high-growth companies than ICT wholesale and ICT manufacturing companies.

[17] ICT manufacturing represent 0% of high-growth manufacturing companies in Cyprus and Luxembourg, but they had few (1) to no ICT manufacturing companies in 2012.

6. Conclusions

Key Findings:

The following paragraphs summarize the most important key findings of the analysis presented in this report:

- New ICT service companies represent 94.7% of all new ICT companies in 2011.
- The ICT sector employs a growing share of employed individuals in Europe:
    - ICT service companies employed an increasing number of individuals; they also employed an increasing share of the individuals who were employed in active companies and new companies.
    - ICT wholesale and ICT manufacturing employment, however, stagnated or decreased;
- Employment in new manufacturing and ICT manufacturing companies does not compensate for employment destroyed by exiting companies, contributing to the declining number of manufacturing jobs in both manufacturing and ICT manufacturing.
- New ICT companies survive more often and grow faster than new non-ICT companies.
- A greater fraction of ICT companies are high growth companies than non-ICT companies.
- A greater fraction of ICT services companies are high growth companies than ICT wholesale and ICT manufacturing companies.
- Over one in seven EU ICT companies is a high-growth company, in terms of employment.

New companies generally promise new jobs and new sources of revenue. This seems even truer in the ICT sector. This report however leaves a number of questions unanswered. It remains unclear whether companies exit because they cannot grow and add employees or they scale down before exiting. Studying these lifecycles may help us to understand how companies succeed and fail.

Finally, this report focuses on past performance: ICT companies make up a larger portion of companies, employ more individuals, and are more likely to become high-growth companies than non-ICT companies. The next step requires us to look at the future and whether some of the trends on the demographics of ICT companies and the employment they create can be sustained over the long term.

Note on data availability:

As indicated in several instances in this report, the available official dataset on new ICT companies in the EU limits the analysis because it does not provide consistent data for each country, over time, or for all variables. Furthermore, when data is available, it is only available until 2011. The analysis reported here therefore sometimes puts together data from different years in order to get a wider picture of the situation in the EU. This report attempts however to remain consistent. The author hopes that better data availability will enable future reports to correct this shortcoming.

7. Annex

Sections 0 and 4 of this report use the Business Demography Database from Eurostat. The dataset includes self-reported data from 26 of the 28 European Union Member States (data for Greece and newly-admitted Croatia are not available in the dataset). The dataset also contains some data on three non-member states: Switzerland, Turkey, and Norway.

This dataset was constructed using aggregate numbers from individual country business registries. Data is available for 2004 to 2011; but, most countries reported for the 2008-2011 period only.

This report investigates ICT and its subsectors: ICT Manufacturing, ICT Services, and ICT Wholesale. Data are regrouped with respect to the NACE Rev 2 classification of the economy. NACE Rev 2 divides the ICT sector into ICT Manufacturing, ICT Wholesale and ICT Services (see Table 5.)

Table 5: List of Economic Activities

Manufacturing (C), from which: • ICT Manufacturing (C_ICT) • Manufacturing (C) (excluding ICT manufacturing)
Trade (G), from which: • ICT Wholesale (G46_ICT) • Wholesale trade, except of motor vehicles and motorcycles (G46) (excluding ICT wholesale)
Services (from H to U), from which: • ICT Services (H-U_ICT) • Services of the business economy except activities of holding companies (H-N_X_K642) (excluding ICT services and wholesale/retail discussed separately); • Education; human health and social work activities; arts, entertainment and recreation; other service activities (P-S)

Because of different official data availability across countries, years and variables, each section or each table of the report specifies which countries are analysed. For more information on dataset collection methods, please visit the Eurostat website.[18]

Section 5 of the report exploits a different dataset called 'high-growth enterprises' (growth of 10% or more) and related employment by NACE Rev. 2 (bd_9pm_r2). Because the sectors are not aggregated in the same way as described in Table 5, the analysis reported in Section 5 aggregated the data using Table 6. Both datasets employ the NACE Rev 2 classification: however, this second dataset is detailed at the three-digit sectorial level.

Even though Table 5 and Table 6 ought to lead to the same results, the data remains incomplete and these two tables are necessary for readers and commentators who which to reproduce these results and understand the subsectors aggregation.

[18] Business demography (bd): Business demography by size class (from 2004 onwards, NACE Rev. 2) (bd_9bd_sz_cl_r2) http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/EN/bd_esms.htm

Table 6: ICT Subsectors and NACE Rev 2 Classifications Used.

ICT manufacturing: • 261 Manufacture of electronic components and boards • 262 Manufacture of computers and peripheral equipment • 263 Manufacture of communication equipment • 264 Manufacture of consumer electronics • 268 Manufacture of magnetic and optical media
ICT Wholesale • 465 Wholesale of information and communication equipment
ICT Services: • 582 Software publishing • 61 Telecommunications • 62 Computer programming, consultancy and related activities • 631 Data processing, hosting and related activities; web portals • 951 Repair of computers and communication equipment

The data analysed in this report was downloaded from the Eurostat website on July 30, 2014.

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