



ANNUAL REPORT ON EUROPEAN SMEs 2016/2017

Focus on self-employment



Annual Report on European SMEs 2016/2017

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SME Performance Review 2016/2017

Contract number: EASME/COSME/2016/010

FINAL REPORT

November 2017

This report was prepared in 2017 for the European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs; Directorate H: COSME Programme; Unit H1: COSME Programme, SME Envoys and Relations with EASME by the consortium composed of:

CARSA
PwC Luxembourg
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Catalogue number ET-AB-17-001-EN-N

ISBN 978-92-79-74126-5

ISSN 2467-0162

doi: 10.2873/742338

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EXECUTIVE SUMMARY

SMEs are the backbone of the EU's economy ...

All but 0.2 % of enterprises which operated in the EU-28 non-financial business sector in 2016 were SMEs. These SMEs employed 93 million people, accounting for 67 % of total employment in the EU-28 non-financial business sector, and generating 57 % of value added in the EU-28 non-financial business sector. Almost all (93 %) of the SMEs were micro SMEs employing less than 10 persons.

Within the non-financial business sector, SMEs play a particularly important role in the 'accommodation and food services', 'business services' and 'construction' sectors, in each of which they accounted for more than 80 % of EU-28 employment in 2016. Furthermore, SMEs accounted for 70 % of EU-28 employment in the 'retail and wholesale trade' sector.

... and they continue to recover from the financial crisis.

The general macro-economic environment in the EU-28 in 2016 strengthened SME activity in all industries due to the expansion of all categories of final demand (i.e. household consumption, government consumption, exports of goods and services, and capital investment by households, governments and businesses). In previous years, the main driver of SME recovery was exports.

The year 2016 marked the third consecutive year of steady increases in EU-28 SME employment and EU-28 SME value added. In total, employment by EU-28 SMEs increased annually by 1.6 % in 2015 and 2016 and the value added generated by SMEs rose by 1.4 % in 2016 following an increase of 5.8 % in 2015. As inflation continued to remain low over these two years in the EU-28, this increase in value added largely reflected a real-term increase in the volume of economic activity of EU-28 SMEs in 2015 and 2016.¹

As a result of the recent upturn, EU-28 SME employment has finally recovered from the 2008/2009 economic and financial crisis and even slightly exceeded the 2008 level in 2016. The level of value added generated by EU-28 SMEs showed even greater recovery, at 11 % higher than in 2008.

The recovery encompassed most EU Member States ...

All Member States except Latvia recorded growth in SME employment in 2016. Fourteen Member States recorded a growth in SME employment by 2 % or more. The frontrunners were Malta, Croatia, Slovakia, Portugal, Cyprus, Lithuania and Luxembourg where SME employment growth surpassed 3 % in 2016.

All Member States except Greece and Poland also saw SME value added increase in 2016. It rose by more than 2 % in 22 Member States and by more than 5 % in five Member States (Bulgaria, Croatia, Ireland, Malta and Romania).

From a long-run perspective, the EU-28 SMEs as a group have clearly recovered from the 2008/2009 economic and financial crisis, although this recovery remains less dynamic in

¹ The variation in value added growth of EU-28 SMEs reflects the significant swings in the euro/pound sterling exchange rate, which first boosted the growth rate in 2015 and then dampened it in 2016. The value added generated by the EU-27 (i.e. the EU-28 minus the United Kingdom) grew by 3.6 % in 2015 and 3.2 % in 2016. Value added measured in euros also declined in the United Kingdom but this reflects the marked depreciation of the euro vis-à-vis the pound sterling in 2016. Value added generated by UK SMEs and measured in the pound sterling increased by 6.2 %.

terms of SME employment growth. A few additional years of solid economy-wide growth will be necessary to leave the effects of the crisis fully behind.

However, at Member State level, the picture is more mixed. In only nine Member States (Austria, Belgium, Finland, Germany, Luxembourg, Malta, Poland, Sweden and the United Kingdom) were the number of SME enterprises and the level of SME employment and SME value added all higher in 2016 than in 2008. In contrast, these three SME performance indicators were still below their 2008 levels in 2016 in six Member States (Croatia, Cyprus, Greece, Italy, Portugal and Spain). The other 13 Member States show only partial recovery in one or two indicators.

... as well as all sectors ...

EU-28 SME employment expanded in practically all sectors of the economy, reflecting a balanced economy-wide growth of 2016, with some sectors recording growth of 3 % or more. However, these sectors with a higher growth of SME employment account for only a small percentage of total EU-28 SME employment. Consequently, the impact of their strong performance on overall EU-28 SME employment was limited. Annual growth in EU-28 SME employment varied considerably across the main non-financial business sectors in 2016, ranging from 0.9 % in 'construction' to 2.8 % in 'business services'.

The employment recovery in SMEs was most dynamic in services industries. Employment growth in 'wholesale and retail trade', 'accommodation and food services' as well as in 'business services' expanded by an estimated 1.7 %, 1.8 % and 2.8 %, respectively, while employment in 'manufacturing' was estimated to have increased by 1.1 % in 2016. Even with this recent upswing, SME employment in 'manufacturing' was still about 11 % below the employment levels at the start of the financial crisis in 2008. Technology intensive sectors played a prominent role in SME's growth. This refers in particular to the group of knowledge intensive services such as high tech services², which recorded the strongest SME employment growth in the EU-28.

... and is expected to continue in 2017 and 2018.

SMEs are expected to continue their relatively steady pace of growth in 2017 and 2018. EU-28 SME employment is forecast to increase by 1 % in 2017 and 0.9 % in 2018, and EU-28 SME value added is predicted to grow by 2.5 % in 2017 and 3.8 % in 2018. Some of the projected acceleration of growth in value added reflects the expected pick-up in inflation from the very low levels of previous years.

Fast-growing firms play a significant role in employment creation ...

Start-ups and scale-ups are important drivers of economic growth. This report shows that **on average 9.2 % of firms with at least 10 employees in the EU-28 'business economy' were high-growth firms** in 2014, the most recent year for which such data was available. Shares of high-growth firms above 12 % were found in Malta, the United Kingdom, Sweden, Latvia, Hungary and Ireland, while the lowest shares of these firms were found in Cyprus and Romania (each below 3 %). On average in the EU-28, 'information and communication' and 'administrative and support services' were the sectors with the highest rates of fast-growing firms, with rates of 15 % and 12.7 % respectively. With 11 % each, 'transportation and storage' and 'professional, scientific

² High tech services include a number of IT-related sectors such as 'Motion picture, video and television programme production, sound recording and music publishing activities', 'Programming and broadcasting services', 'Telecommunications', 'Computer programming, consultancy and related activities', 'Information service activities' and 'Scientific research and development'.

and technical activities' were also among the sectors with the highest shares of high-growth firms.

Since 2016, the EU's 'Europe's next leaders: the Start-up and Scale-up Initiative' provides comprehensive support to ambitious start-ups and innovative high-growth firms. The initiative combines a range of existing and new actions to reduce existing barriers to growth so as to enable start-ups and scale-ups to expand their business across Europe and beyond.

... while over 90 % of newly created firms are born in traditional (i.e. non-ICT) sectors.

According to the most recent data (2012-2014), the large majority of newly created firms in the EU-28 were born in non-ICT industries. Namely, the ICT sector (ICT manufacturing, ICT services, ICT wholesale and online retail trade) accounted for only 7.9 % of all EU-28 enterprise births during this period.

The average enterprise birth rate³ stood at around 10 % over the period 2010 to 2014 – the most recent years for which harmonised data was available – with about 70 % of newly created firms having had no employees. The enterprise birth rate of 22 Member States stood within a range of +/- 3.5 percentage points of the EU average, but there were also some outliers such as Belgium's enterprise birth rate being only about half of it, while the Lithuanian rate was 1.5 times higher. Newly created enterprises (less than one year old) accounted for between 6 % and 15 % of all enterprises in the EU-28 business economy across sectors. The 'wholesale and retail trade', 'professional, scientific and technical activities' and 'construction' sectors stood out. Together, these three sectors accounted for 58 % of all enterprise births over the period 2012-2014 in total.

Among SMEs, the approximately 31 million self-employed play an underestimated role ...

Many of the EU-28 SMEs are run by self-employed individuals, i.e. individuals who are active in a business but not in a paid employment position. These businesses may have different legal structures (e.g. sole trader, incorporated business, partnership, etc.), but they all have in common that at least one self-employed person is involved in the business.

In 2016, 30.6 million individuals were self-employed in the EU-28, **accounting for 14 % of total EU-28 employment**. 71.5 % of these self-employed did not employ any staff. The proportion of self-employment in total employment varies greatly among Member States. In 2016, it ranged from 7.7 % in Denmark to 29.5 % in Greece. Overall, self-employment in 2016 was more prevalent in Central-Eastern and Southern EU Member States than in Western EU Member States. A wide range of factors could explain these differences, for example average working hours of salaried employees, educational levels, the average age of the population, wage levels, tax rates, etc.

New information technologies have led to new ways of production and opportunities for self-employment. However, so far there is little evidence that the emergence of the so-called 'platform' or 'gig' economy, i.e. an economy characterised by the presence of many online platforms matching individuals wishing to offer particular services with individuals seeking these services, has had a considerable EU-wide impact on the self-employment rate. It should be noted, though, that this sector is intrinsically difficult to measure.

³ The term enterprise birth rate is defined as number of newly created enterprises in year t divided by number of active enterprises in year t-1.

... although at least some of them are dynamic job creators.

Newly founded firms, created by self-employed, have survival rates typically between 30-60 % after the first five years. These figures are not fundamentally different from other newly founded businesses. Also, their mortality rate does not accelerate over time. The employment performance of firms created by self-employed individuals is mixed. While data for the surviving firms show that the vast majority of firms created by the self-employed do not substantially increase employment in the five years following their creation, there is a sub-set of up to 20 % of firms that manages to increase employment by more than 5 employees. Hence, in combination with the sheer **number of self-employed, this segment does have a sizeable impact on the economy**, and especially on employment creation.



Photo: Jarrow/Shutterstock.com

1. Introduction

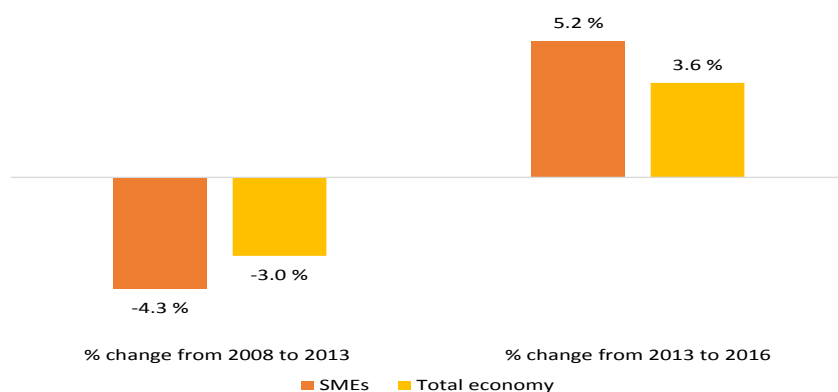
The present report is part of the 2016/17 SME Performance Review.⁴ It focuses on the performance of SMEs in the EU-28, and two special chapters review recent developments in self-employment, an important segment of the EU-28 SME population, and discuss start-ups and scale-ups.

⁴ More details on the SME Performance Review are provided in Annex 1.

1.1 SMEs in the European Union

After declining for a number of years following the 2008/2009 economic and financial crisis, EU-28 SME employment has picked up more recently and has outshone the economy as a whole. EU-28 SME employment grew by 5.2 % from 2013 to 2016, almost 50 % faster than overall employment in the EU-28 economy over the same period.

Figure 1: Change (in %) of EU-28 SME and EU-28 economy-wide employment, 2008 to 2013 and 2013 to 2016



Source: Eurostat, National Statistical Offices, DIW Econ

Note: Total economy employment = number of persons employed in the economy (national accounts basis from AMECO)

SMEs comprise three different categories of enterprises, namely micro-enterprises, small enterprises and medium-sized enterprises (see Table 1).

The official EC definition of SMEs takes account of three different factors (level of employment, level of turnover, and size of the balance sheet). However, the data in the present report are based only on the employment definition, since this is the definition used by the Structural Business Statistics (SBS) database maintained by Eurostat, the main data source for the report.

Table 1: Definition of SMEs

Company Category	Employees	Turnover	Balance sheet total
Micro	< 10	< €2 million	< €2 million
Small	< 50	< €10 million	< €10 million
Medium - sized	<250	< €50 million	< €43 million

Source: Commission Recommendation of 6 May 2003 concerning the definition of micro, small, and medium-sized enterprises. (2003/361/EC), Official Journal of the European Union, L 124/36, 20 May 2003

The analysis of SME performance in the present report focuses on the non-financial business sector. This broad sector consists of all sectors of the economies of the EU-28 Member States, except 'financial services', 'government services', 'education', 'health', 'arts', 'culture' and 'agriculture, forestry, and fishing'. However, due to data limitations, the review and analysis of self-employment in Chapter 7 of the report covers the whole economy.

Overall, in 2016, SMEs in the EU-28 non-financial business sector accounted for:

- almost all EU-28 non-financial business sector enterprises (99.8 %);
- two-thirds of total EU-28 employment (66.6 %); and

SME employment grew almost 50 % faster than economy-wide employment from 2013 to 2016

- slightly less than three-fifths (56.8 %) of the value added generated by the non-financial business sector (Table 2).

Micro SMEs are by far the most common type of SME, accounting for 93.0 % of all enterprises and 93.2 % of all SMEs in the non-financial business sector (Table 2).

However, micro SMEs account for only 29.8 % of total employment in the non-financial business sector, while small and medium-size SMEs accounted for 20.0 % and 16.7 % respectively of total employment.

In contrast to the very uneven distribution of the number of enterprises and employment across the three SME size classes, their contribution is broadly equal in terms of value added, ranging from 17.8 % (small SMEs) to 20.9 % (micro SMEs).

Table 2: SMEs and large enterprises: number of enterprises, employment, and value added in 2016 in the EU-28 non-financial business sector

	Micro	Small	Medium	SME	Large	Total
Number of enterprises						
In thousands	22,232	1,392	225	23,849	45	23,894
In % of total enterprise population	93.0 %	5.8 %	0.9 %	99.8 %	0.2 %	100.0 %
Number of persons employed						
In thousands	41,669	27,982	23,398	93,049	46,665	139,7141
In % of total employment	29.8 %	20.0 %	16.7 %	66.6 %	33.4 %	100.0 %
Value added						
In EUR Trillion	1,482	1,260	1,288	4,030	3,065	7,095
In % of total value added	20.9 %	17.8 %	18.2 %	56.8 %	43.2 %	100.0 %

Source: Eurostat, National Statistical Offices, and DIW Econ

Note: Date as of 30 June 2017. Totals may differ from sum of components due to rounding.

The contribution of SMEs to employment generated by the non-financial business sector is particularly important in Bulgaria, Cyprus, Estonia, Greece, Italy, Latvia, Lithuania, Malta and Portugal, where SMEs accounted for more than three quarters of total employment in the non-financial business sector in 2016 (Figure 2).

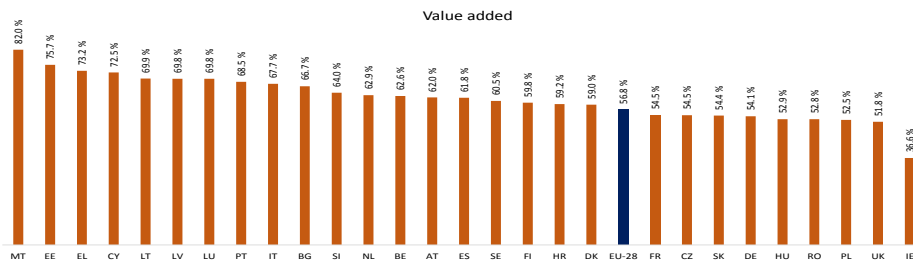
Similarly, from a value added perspective, SMEs are particularly important in Luxembourg, a number of southern Member States (Cyprus, Greece, Italy, Malta and Portugal) and smaller central European Member States (Bulgaria, Estonia, Latvia and Lithuania). In these countries, SMEs accounted for more than two thirds of the total value added of the non-financial business sector in 2016 (Figure 2).

Figure 2: Contribution of SMEs to employment and value added in the non-financial business sector in 2016



In 2016, SMEs accounted for 67 % of employment and 57 % of value added in the non-financial business sector

Among Member States, SMEs play the most important economic role in 2016 in Cyprus and Greece (more than 80 % of total employment) and Malta (more than 80 % of value added)



Source: Eurostat, National Statistical Offices, and DIW Econ

Note: The data for Ireland reflect the recent revisions to the economy-wide and sectoral value added and GDP data.

As already noted, in the EU-28, micro SMEs accounted in 2016 for 30 % of total employment and 21 % of total value added in the non-financial business sector. However the contribution to employment and value added of this group of SMEs varies markedly across Member States:

- In the case of employment, the share of micro SME employment in total employment in the non-financial business sector ranged in 2016 from 17 %⁵ in the United Kingdom to 57 % in Greece (Figure 3).
- Similarly, in the case of value-added, in 2016, the share generated by micro SMEs in the non-financial business sector ranged from 16 % in Germany to 36 % in Malta (Figure 4).

In contrast, the share of employment and value added generated by small SMEs in the non-financial business sector shows somewhat less dispersion around the EU-28 average:

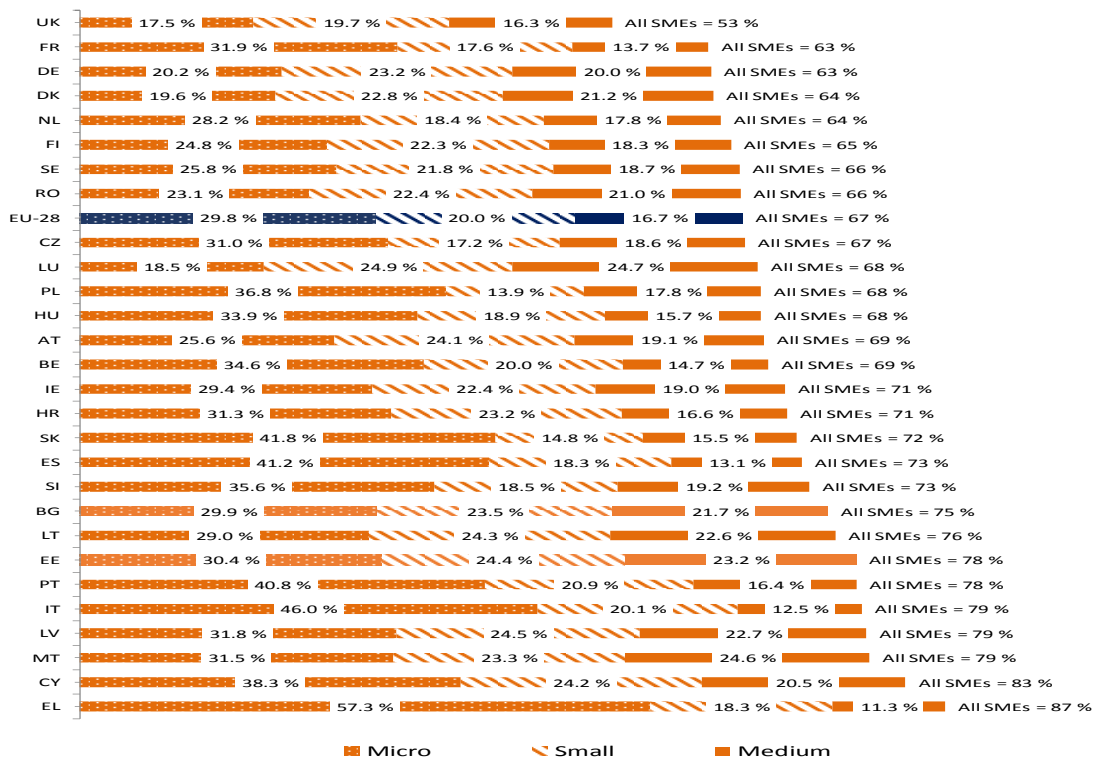
- In the case of employment, the small SMEs' share ranged from 14 % (Poland) to 25 % (Luxembourg).
- In the case of value added, the small SMEs' share ranged from 8 % (Ireland) to 25 % (Malta).

A similar, smaller variation around the EU-28 average in the employment shares of medium-sized SMEs is also observed in 2016:

- The share of employment of medium-sized SMEs ranged from 11 % (Greece) to 25 % (Luxembourg and Malta).
- The share of value-added of medium-sized SMEs ranged from 8 % (Ireland) to 28 % (Lithuania).

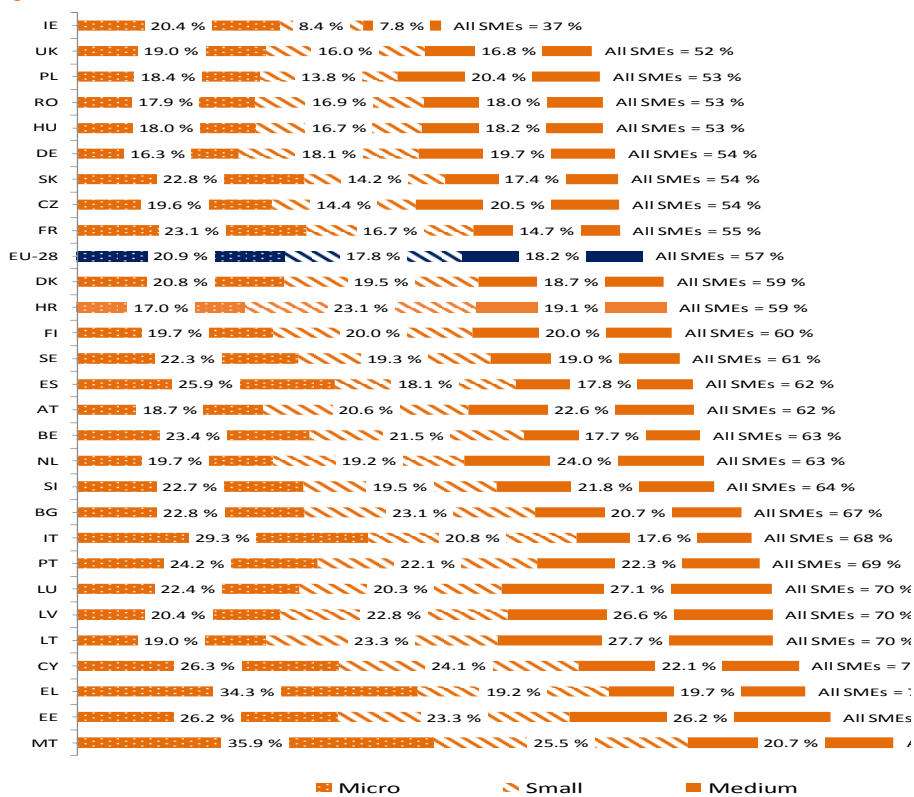
⁵The precise percentage is 17.46 %.

Figure 3: Contribution of different SME size classes to employment in the non-financial business sector in 2016



Source: Eurostat, National Statistical Offices, and DIW Econ

Figure 4: Contribution of different SME size classes to value added generated in the non-financial business sector in 2016



Source: Eurostat, National Statistical Offices, and DIW Econ

Note: The data for Ireland reflect the recent revisions to the economy-wide and sectoral value added and GDP data.

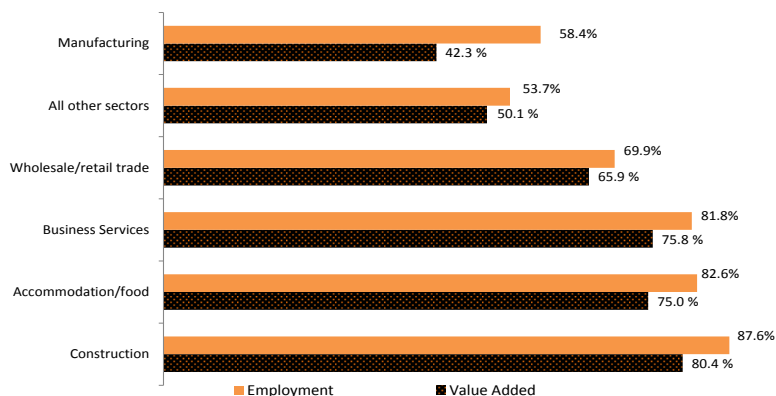
In 2016, SMEs accounted for more than 2/3 of employment and value added in the 'accommodation and food services', 'business services', 'construction' and 'trade' sectors

In terms of their contribution to sectoral employment and value added, SMEs are the most important enterprise size class in the 'construction' sector, and also, to a lesser extent, in 'business services', 'accommodation and food services', and 'wholesale and

retail trade'. Overall, in 2016, the contribution of SMEs in these four sectors ranged from 70 % to 88 % in terms of employment, and 66 % to 80 % in terms of value added (Figure 5).

Even in the EU-28 manufacturing sector, in which large enterprises are generally dominant, SMEs still accounted for 58 % of total employment and 42 % of total value added in 2016.⁶

Figure 5: Contribution of SMEs to employment and value added in the key sectors of the EU-28 non-financial business sector in 2016



Source: Eurostat, National Statistical Offices, and DIW Econ

Even when SMEs account for a large share of employment and/or value added in a particular sector, this does not necessarily imply a correspondingly large share of SME employment/value added in the overall non-financial business sector. This is because the sector concerned may be relatively small.

For example, in the EU-28 in 2016, SMEs accounted for 88 % of total construction sector employment and 80 % of total construction sector value added but only 12 % of total SME employment and 11 % of SME value added in the EU-28 non-financial business sector as a whole (Figure 6).

Figure 6: Share of number of SME enterprises, SME employment and SME value added in different industries in number of SMEs, SME employment and SME value added in the EU-28 non-financial business sector in 2016



Source: Eurostat, National Statistical Offices, and DIW Econ

In 2014, the most recent year for which data are available for EU-28 Member States on total employment and unpaid employment in the non-financial business sector, 13.8 % of

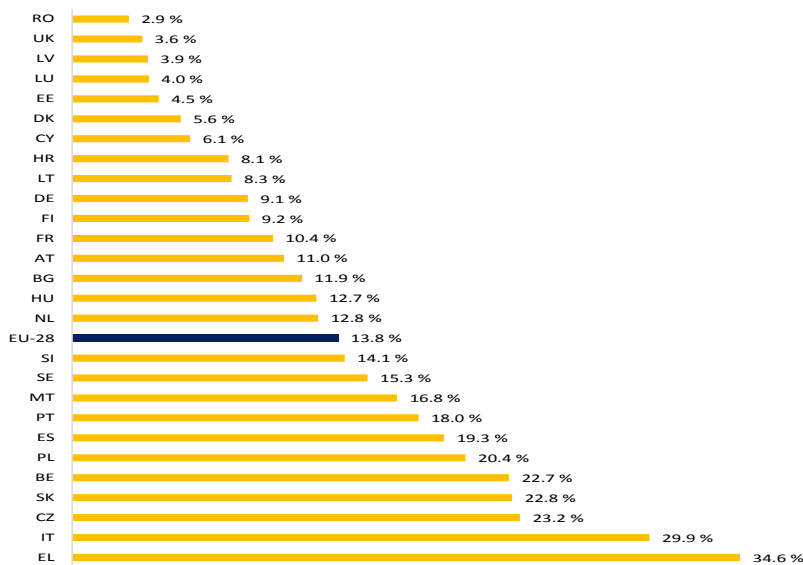
⁶ As large enterprises in the 'manufacturing' sector tend to be more capital-intensive than SMEs, their share of total manufacturing value added is markedly higher than their share of manufacturing employment. Conversely, the SMEs' share of manufacturing sector is notably lower than their share of manufacturing employment. In the other sectors, the differences in capital and employment intensities of large enterprises and SMEs are smaller.

workers in the non-financial business sector were in unpaid employment in the EU-28 (Figure 7).⁷ Typically, such workers are self-employed workers. It is important to note that the data on paid and unpaid employment are based on information collected from businesses for the Structural Business Statistics and differ somewhat from the data on self-employment used in this report's special chapter on self-employment. The latter data are collected directly from individuals as part of the Labour Force surveys undertaken regularly in all Member States.

The share of unpaid employment in total employment in the non-financial business sector varied greatly across Member States, from 2.9 % in the case of Romania to 34.6 % in Greece (Figure 7).

- In six Member States (Belgium, Czech Republic, Greece, Italy, Poland and Slovakia) the share of unpaid employment exceeded 20 % and in a further four Member States (Malta, Portugal, Spain and Sweden), the share of unpaid employment was in the range of 15 % to 20 %.
- In contrast, in five Member States (Estonia, Latvia, Luxembourg, Romania, and the United Kingdom), the share of unpaid employment in the non-financial business sector was less than 5 %. In a further six Member States (Cyprus, Croatia, Denmark, Finland, Germany and Lithuania) the share of unpaid employment ranged from 5 % to 10 %.
- In the remaining six Member States (Austria, Bulgaria, France, Hungary, the Netherlands and Slovenia) the share of unpaid employment ranged from 10 % to 15 %.

Figure 7: Share of unpaid employment in total employment in the non-financial business sector in 2014



Source: Eurostat

Note: EU-28 excludes Ireland due to missing data

Although the paid employment and unpaid employment data from the Eurostat SBS data do not provide a breakdown by enterprise size class, the Eurostat business demography data show that, in 2014⁸, enterprises with 0 employees (i.e. with 0 persons in salaried positions) accounted on average in the EU-28 for 56 % of all active enterprises (see Figure 8 in Box 1).

In 2014, 13.8 % of workers were in unpaid employment in the EU-28 non-financial business sector

⁷ Total employment is equal to the sum of a) individuals in paid employment (i.e. individuals who have a contract of employment and receive compensation in the form of wages, salaries, fees, gratuities, piecework pay or remuneration in kind) and b) individuals in unpaid employment (i.e. self-employed individuals and unpaid family members). In the data, business owners who do not draw a salary from their business are considered to be self-employed individuals, while business owners who draw a salary are considered to be paid employees.

⁸ As of 30 June 2017, 2014 is the most recent year for which data are available from Eurostat.

Moreover, on average in the EU-28, the increase from 2009 to 2014 in the number of active enterprises with 0 employees accounted for 83 % of the total increase in the number of active enterprises (Figure 9 in Box 1).

This brief overview of key facts about the number of SMEs with 0 employees highlights that unpaid employment (i.e. self-employment) is a major driver of the SME business population in the non-financial business sector. In the light of its economic importance, the issue of self-employment is further explored in this year's special chapter in the SME Annual Report.

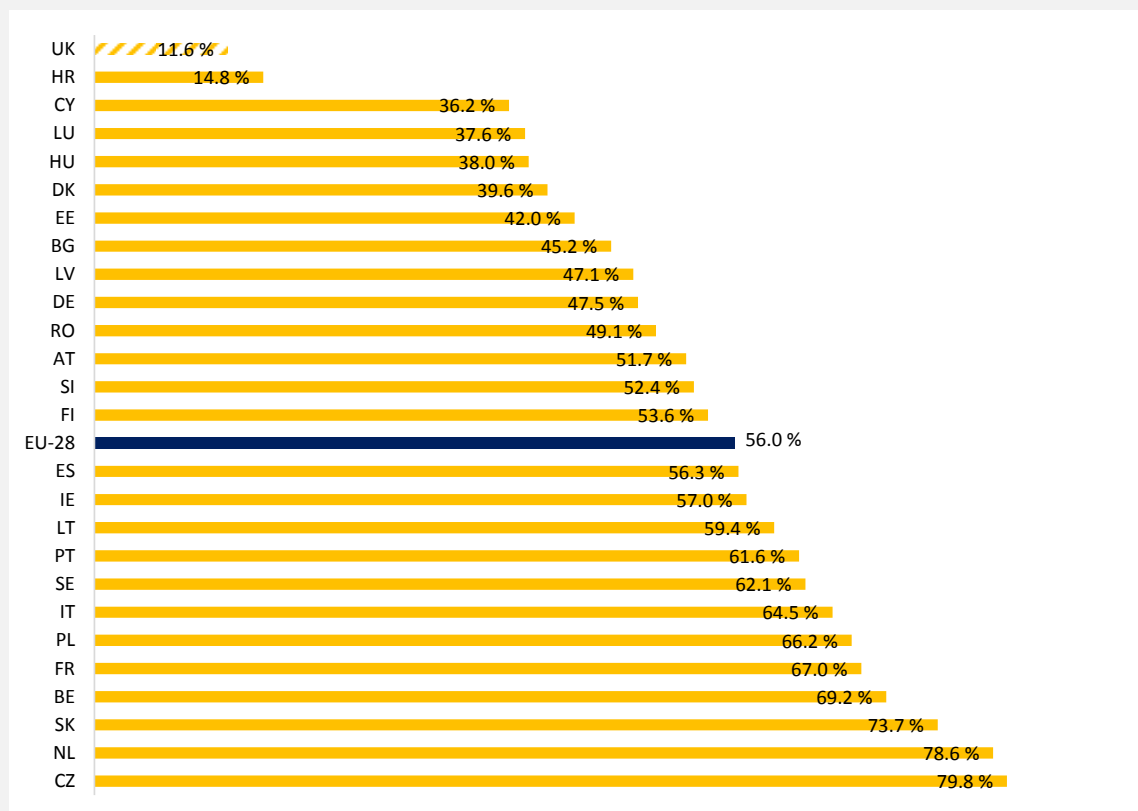
Box 1

Paid/unpaid employment and enterprises with 0 employees

As unpaid workers are, by definition self-employed and unpaid family members, enterprises with 0 employees are the businesses of self-employed individuals. However, as will be seen in the special chapter on self-employment, this group of enterprises represents only one part of the businesses run by self-employed persons, as the latter may employ staff in paid employment positions.

In 2014, across the EU, these enterprises accounted for more than half of all active enterprises in 15 Member States (Austria, Belgium, Czech Republic, Finland, France, Ireland, Italy, Lithuania, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain and Sweden) and almost half⁹ of all active enterprises in a further four Member States (Bulgaria, Germany, Latvia and Romania).

Figure 8: Share of the number of active enterprises with 0 employees in the total number of active enterprises in 2014



Source: Eurostat

Note: EU-28 excludes Greece and Malta because of lack of data. The share of businesses with 0 employees is markedly understated in the case of the UK because the VAT registration threshold is very high (£80,000) compared to other EU-28 Member States. Therefore, many such businesses are not recorded in the business statistics.¹⁰ In the case of some countries, the number of businesses with 0 employees has been boosted by the creation of a special legal status for some form of self-employment. This is the case, for example, in France, with the 'auto-entrepreneur' status and also in the Netherlands with the 'zelfstandige zonder personeel' status.

⁹ More than 45 %.

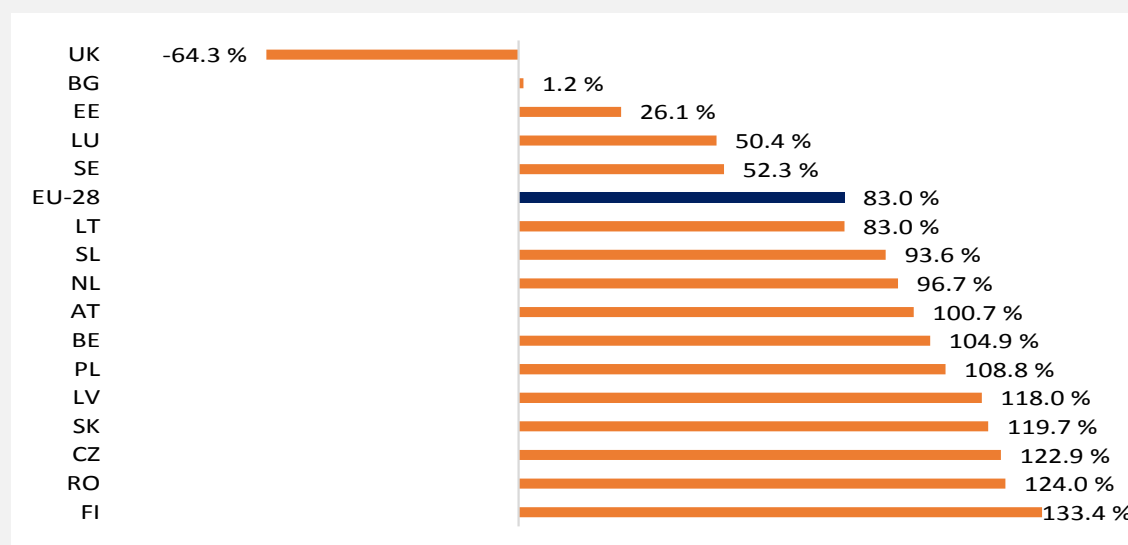
¹⁰ For example, according to the latest Business Population Estimates for the UK and Regions 2016, published by the UK Department for Business, Energy and Industrial Strategy in October 2016, out of the estimated 5.5 million businesses which were active in the UK in 2016, only 2.5 million were registered for VAT or Pay As You Earn (PAYE). The latter is a system under which employees' income tax and social security contributions are withheld at source and transferred directly by the business to the tax authorities. Businesses with 0 employees do not have to register for PAYE, as self-employed persons are subject to different tax arrangements.

Box 1 (continued)

From 2009 to 2014, the increase in the number of active enterprises with 0 employees exceeded the overall increase in the number of active enterprises over the same period in 8 Member States (Austria, Belgium, Czech Republic, Finland, Latvia, Poland, Romania and Slovakia) and accounted for more than 80 % of the total increase in a further 3 Member States (Lithuania, the Netherlands, and Slovenia).

In contrast, in Germany and Hungary, two of the countries in which the overall number of active enterprises fell from 2009 to 2014, the decline in the number of enterprises with 0 employees was far greater than the overall decline in the number of active enterprises. In a further two countries (Italy and Portugal), the decline in the number of enterprises with 0 employees accounted for approximately ¾ of the total decrease in the number of active enterprises.

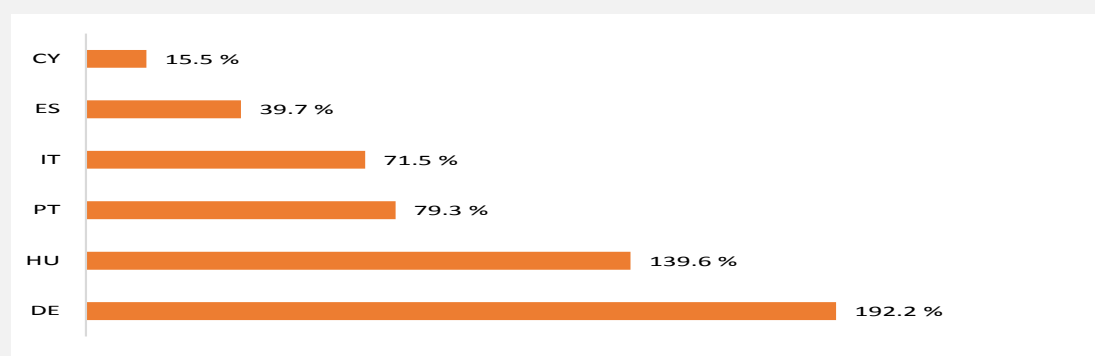
Figure 9: Contribution (in %) made by enterprises with 0 employees to the change in the number of active enterprises from 2009 to 2014, for those Member States experiencing increases in the number of active enterprises in the non-financial business sector from 2009 to 2014



Source: Eurostat

Notes: The EU-28 figure excludes Croatia, Greece and Malta due to missing data; Denmark, due to marked and largely offsetting changes in the number of active enterprises with (a) 0 employees and (b) 1 to 4 employees, and France and Ireland because of a break in the data series.

Figure 10: Contribution (in %) made by enterprises with 0 employees to the change in the number of active enterprises from 2009 to 2014, for those Member States experiencing decreases in the number of active enterprises in the non-financial business sector from 2009 to 2014



Source: Eurostat

1.2 Structure of the report

In addition to reviewing the performance of SMEs in recent years, and discussing the outlook for SMEs in 2017 and 2018, the present report analyses in greater detail developments in self-employment in the EU-28 as a whole, in individual EU-28 Member States, and in other selected countries. The objective is to provide a solid evidence base for the ongoing policy debate about the role and contribution of self-employment and the issues raised by self-employment.

The first part of the SME Annual Report 2016-2017 focuses on the economic performance of SMEs, and in particular:

- discusses the macroeconomic and business conditions faced by SMEs in 2016;
- provides a top level overview of the economic performance of SMEs in the EU-28 in 2016;
- reviews in greater detail the employment, productivity, export and profit performance of SMEs in the EU-28 in 2016; and
- reviews the future prospects of SMEs.

The second part of the report focuses on self-employment, and in particular:

- provides an overview of recent developments in self-employment in EU-28 Member States and other selected countries;
- presents the results of a number of statistical analyses focusing on the factors explaining differences in self-employment among EU-28 Member States;
- examines the employment creation performance of various SME cohorts¹¹ created after the economic and financial crisis, which started with 0 or only very few employees, i.e. SMEs with an important self-employment dimension;
- presents the findings of a number of case studies of self-employed persons which focus on the reasons for having chosen self-employment and the issues and challenges faced;
- lists in summary form the main policy measures supporting and/or encouraging the take-up of self-employment in EU-28 Member States.

The third part of the report reviews recent trends in enterprise births, and tackles the employment performance of start-ups and scale-ups.

¹¹ SME cohorts are groups of SMEs which were born in the same year.



Photo: Castleski/Shutterstock.com

Part 1: Current SME business environment & economic performance of SMEs

This first part of the report:

- discusses the macroeconomic and business conditions faced by SMEs in 2016;
- provides a top level overview of the economic performance of SMEs in the EU-28 in 2016;
- compares the performance of EU-28 SMEs with the performance of their counterparts in the USA and other selected countries;
- reviews in greater detail the employment, productivity, export and profit performance of SMEs in the EU-28;
- presents the prospects for SMEs in 2016 and 2017.

2. Macroeconomic and business conditions faced by SMEs in 2016

2.1 General economic context in 2016

Overall, SMEs in the EU-28 economy faced a relatively favourable economic environment in 2016, with all components of EU-28 aggregate demand (household consumption, government expenditure, investment, and exports) growing at a moderate pace after adjusting for inflation (Figure 11).

With the exception of investment (which includes construction of housing and commercial, institutional, and industrial properties, as well as infrastructure), the level of spending by the other components of aggregate demand is, in real terms (i.e. after adjusting for inflation), now well above the peak level reached before the financial/economic crisis.

In 2016, SMEs in all industries benefited from the more balanced growth of all domestic and foreign sources of demand for goods and services. In contrast to the export-led economic growth pattern of a few years ago, which instead favoured only SMEs with a heavy export focus.

Economic conditions in the EU-28 in 2016 were conducive to growth of SME activity in all sectors

Box 2

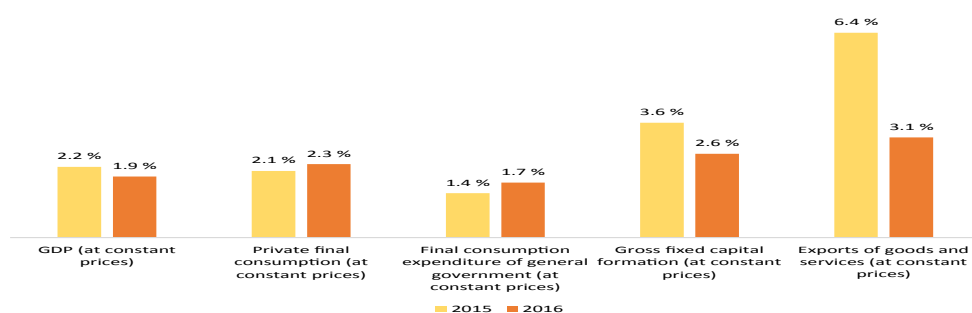
Changes in aggregate demand components and SME economic activity

The performance of SMEs in the 'accommodation', 'retail and wholesale' and 'other' sectors depends to a large extent on developments in private final consumption (at constant prices).

The evolution of gross fixed capital formation (at constant prices) has a major positive impact on the performance of SMEs in the 'construction' and 'business services' sectors.

Increases in the volume of net exports of goods (at constant prices) positively impacts a number of SMEs in the 'manufacturing' sector.

Figure 11: EU-28 and aggregate demand in 2015 and 2016

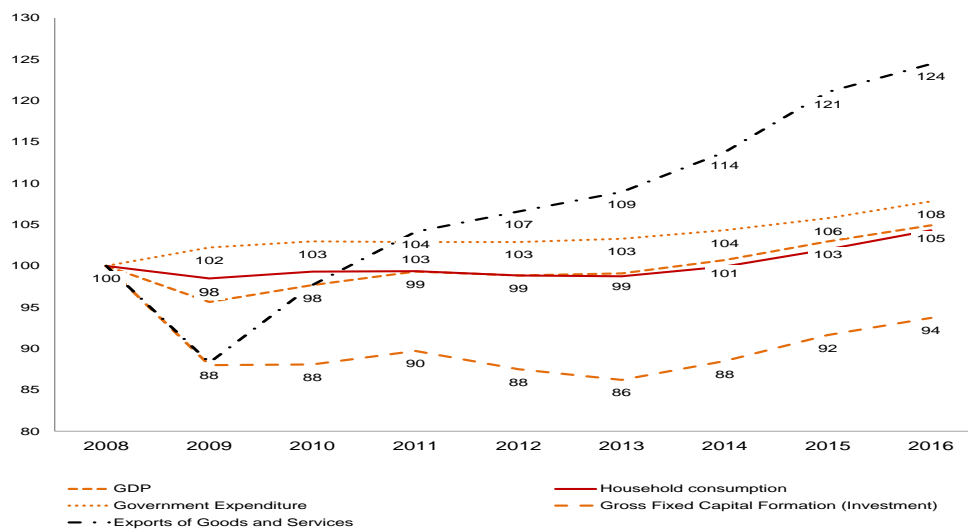


Source: European Commission AMECO database

With the exception of gross fixed capital formation (which includes construction of housing, commercial, institutional and industrial properties as well as infrastructure), the level of spending in real terms (i.e. after adjusting for inflation) by the other components of aggregate demand is now generally well above the peak reached before the pre-financial/economic crisis.

However, while the volume of exports of goods and services was 24 % higher in 2016 than in 2008, household consumption (i.e. private final consumption) and government spending (excluding physical investments) were respectively only 5 % and 8 % higher in 2016 than in 2008 (Figure 12). In other words, exports of goods and services were clearly the main drivers of economic growth in the EU-28 from 2008 to 2016, even though all aggregate demand components contributed to growth of the EU-28 economy in 2016 (Figure 11).

Figure 12: EU-28 aggregate demand – from 2008 to 2016 (2008=100)

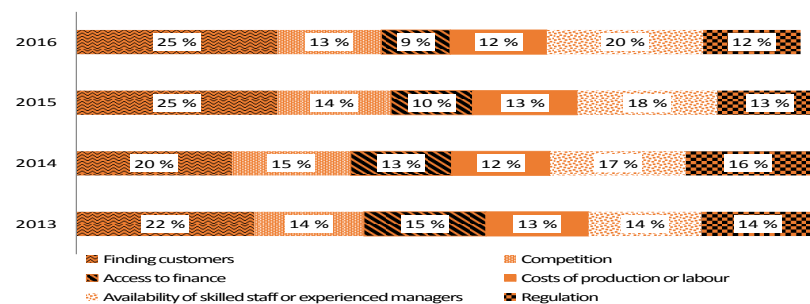


Source: European Commission AMECO database

2.2 Issues and challenges faced by SMEs in 2016

In terms of major business issues and challenges faced by SMEs in 2016, ‘finding customers’ is cited most frequently by SMEs participating in the 2016 SAFE survey as the ‘most pressing issue’, as was also the case in 2015. (Figure 13). While 25 % of SMEs highlight this issue as the most pressing, another 20 % identify ‘availability of skilled staff or experienced managers’ as the most pressing issue. In contrast, ‘access to finance’ was specified by only 9 % of SMEs as the most pressing issue, perhaps a consequence of improved financial market conditions and the availability of numerous SME-focused financial schemes implemented in many Member States.

Figure 13: Most pressing issues faced by SMEs in recent years – EU-28 SAFE survey



Source: European Commission / ECB SAFE Survey 2016

Most pressing issues for SMEs in 2016 were ‘finding customers’ and ‘availability of skilled staff or experienced managers’

3. General overview of the economic performance of SMEs in the EU-28 in 2016

SME employment in the EU-28 increased by 1.6 % in 2016, following an increase of 1.5 % in 2015. The value added generated by SMEs in the EU-28 increased by 1.4 % in 2016 after growing by 5.8 % in 2015. To a large extent, the slowdown in value added growth in 2016 reflects the large swings of the euro vis-à-vis the pound sterling in both 2015 and 2016.

In 2015, the weakening of the euro vis-à-vis the pound sterling boosted the aggregate level of valued added generated by UK SMEs when denominated in euros, and hence the overall EU-28 value added level, whereas the opposite occurred in 2016. In fact, the value added generated by the SMEs in the EU-27 (i.e. the EU-28 minus the United Kingdom) grew by 3.6% in 2015 and 3.2% in 2016., while the value added measured in euros of UK SMEs increased by 16.4% in 2015 and fell by 6.7% in 2016.

A better measure of underlying developments in EU-28 SME value added is provided by the average growth rate¹² across the two years. This latter indicator shows that EU-28 SME value added grew at an annual average rate of 3.5 % in 2015 and in 2016 (Figure 14).

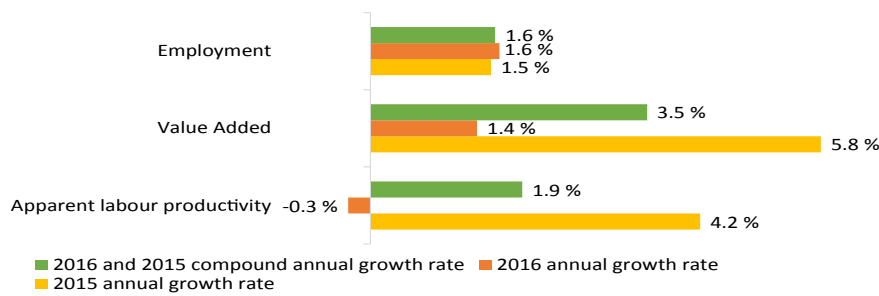
As inflation remained very low during this period, most of the increase in EU-28 value added in both 2015 and 2016 reflected an increase in the actual volume of SME business activity. Apparent SME labour productivity (defined as value added per employed person) increased on average by 1.9 % in 2015 and 2016, reflecting mainly real increases in labour productivity.

The compound annual growth rate in 2015 and 2016 was 1.6% for EU-28 SME employment, and 3.5% for value added

As inflation was very low in 2015 and 2016, the annual increase of 1.9 % in apparent labour productivity mainly reflected real productivity gains

¹² The compound annual growth rate is used.

Figure 14: Employment and value-added growth (in %) of EU-28 SMEs in 2015 and 2016



Source: Eurostat, National Statistical Offices, and DIW Econ

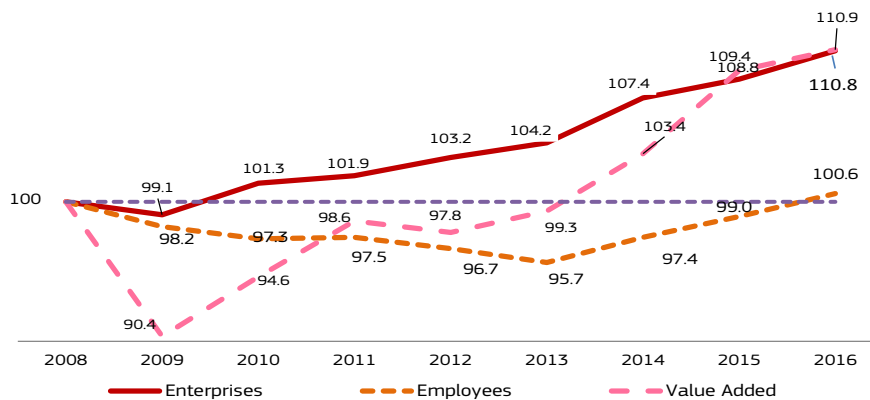
Notes: The growth rate of EU-28 SME value added in 2015 and 2016 is affected by the sharp swings in the €/£ rate in 2015 and 2016. Value added measured in euros was boosted in 2015 as a result of the appreciation of 11.1% (on an annual basis) of the pound sterling vis-à-vis the euro. In contrast, in 2016 the depreciation of 11.4% (on an annual basis) of the pound sterling vis-à-vis the euro dampened value added measured in euros. Due to rounding, the percentage change in apparent labour productivity differs slightly from the differences between the growth rates of value added and employment shown in the figure.

As a result of the continued growth of EU-28 SME employment in 2016, the level of EU-28 SME employment has finally fully recovered from the economic and financial crisis of 2008/09, so that it was marginally higher in 2016 than in 2008 (Figure 15).

Moreover, in 2016, the number of EU-28 SME enterprises and the level of value added generated by EU-28 SMEs were both 11% higher than in 2008.

EU-28 SME employment finally recovered completely from the economic and financial crisis in 2016 – rising to 0.6% above the 2008 level

Figure 15: Number of EU-28 SME enterprises, employment and value added, from 2008 to 2016 (2008=100)



Source: Eurostat, National Statistical Offices, and DIW Econ

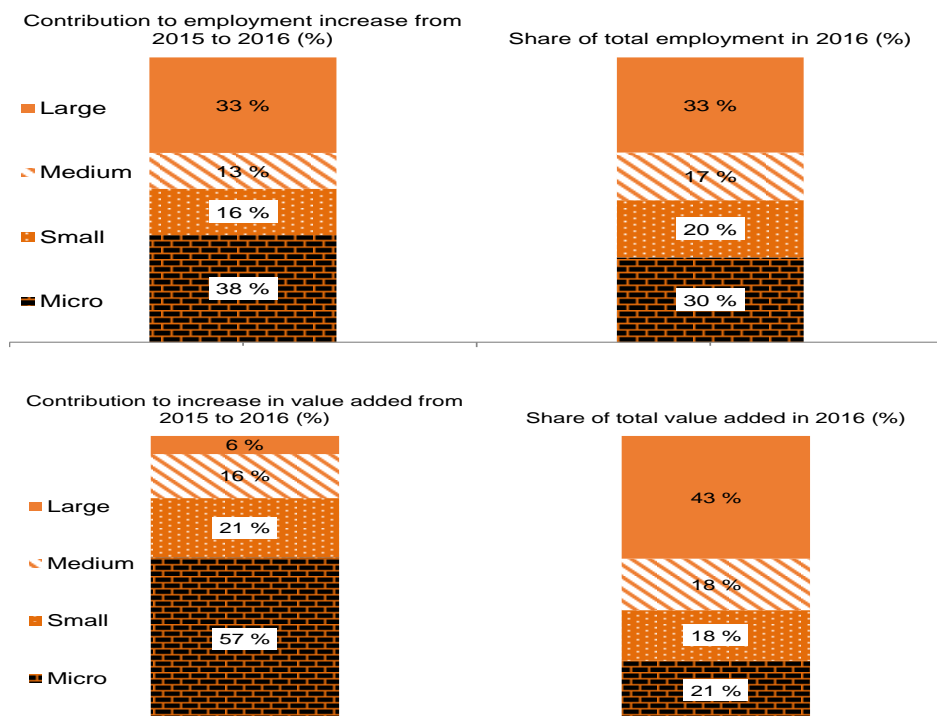
Note: The data for the Netherlands and Slovakia are marked by a break in 2013 and 2009 respectively.

There was broad correspondence in 2016 between the relative contribution of the different enterprise size classes to the overall increase in EU-28 employment in the non-financial business sector and the relative importance of the size classes in the sector.

In contrast, during the same period, micro enterprises accounted for a disproportionately large share of the increase in total value added generated by the non-financial business sector (Figure 16)

The levels of EU-28 SME value added and the number of EU-28 SMEs increased even more sharply in 2016 – to 11% higher than in 2008

Figure 16: Contribution of different enterprise size classes to increase in employment and value added in the EU-28 non-financial business sector in 2016



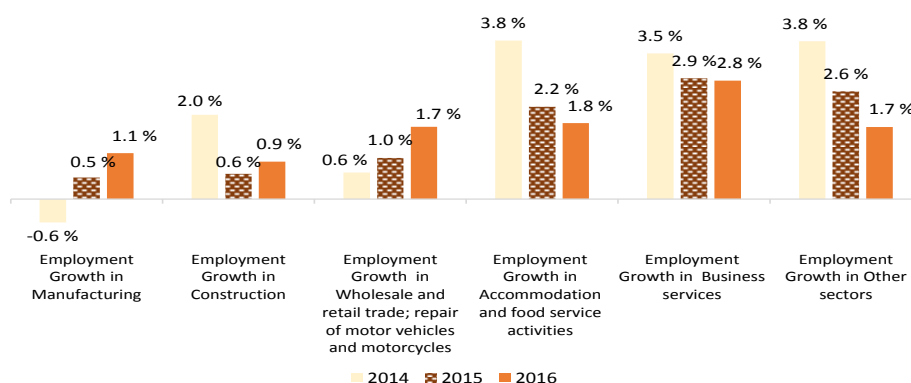
Source: Eurostat, National Statistical Offices, and DIW Econ

Annual growth in EU-28 SME employment showed much more variation in 2016 across the six sectors which are the most important for SMEs¹³, ranging from 0.9% in 'construction' to 2.8% in 'business services'.

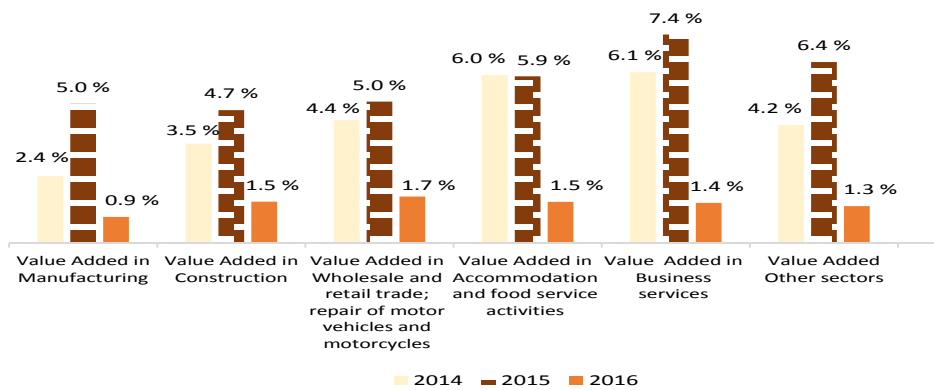
In contrast, annual growth in EU-28 SME value added was broadly similar in all six key sectors, ranging from 0.9% in 'manufacturing' to 1.7% in 'wholesale and retail trade' (Figure 17)

Business services showed the strongest SME employment growth in the EU-28 in 2016

Figure 17: Annual growth in EU-28 SME employment and value added, 2014, 2015 and 2016



¹³ See review of the importance of different sectors for SMEs in the Annual SME Report of 2015/16 and 2014/15.



Source: Eurostat, National Statistical Offices, and DIW Econ

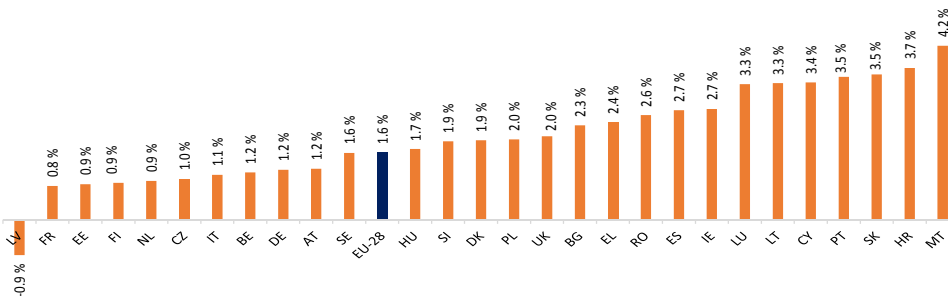
All Member States, except Latvia, show SME employment growth in 2016. The growth of 2 % in UK SME employment (Figure 18) reflects the underlying value added performance of UK SMEs.

Although the value added generated by UK SMEs declined by 6.7 % in 2016 when expressed in euros (Figure 19), in reality it is highly unlikely that the 2 % employment growth would have occurred if UK SME value added had truly declined by this amount. In point of fact, UK SME value added expressed in pounds sterling grew by 6.2 %.

SME value added increased in all Member States with the exception of Greece, Poland, and the UK (as previously mentioned). It rose by more than 2 % in 22 Member States and by more than 5 % in five Member States (Bulgaria, Croatia, Ireland, Malta and Romania) (Figure 19).

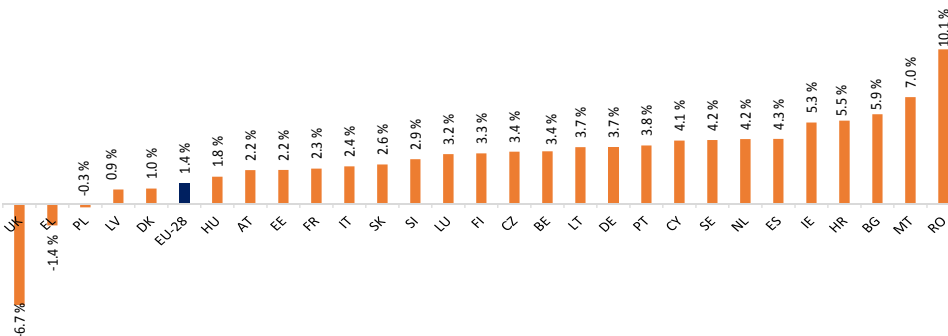
Only 9 Member States (AT, BE, DE, FI, LU, MT, PL, SE, UK) show full recovery by 2016 in the number of SME enterprises and SME employment and value added

Figure 18: Annual growth in SME employment in 2016



Source: Eurostat, National Statistical Offices and DIW Econ

Figure 19: Annual growth in SME value added in 2016



Source: Eurostat, National Statistical Offices and DIW Econ

The recent SME performance figures at EU-28 level show very positive developments, with a strong recovery from the economic and financial crisis of

2008/2009 in terms of number of SME enterprises and value added, and a marginal recovery in the case of SME employment.

However, this recovery is not shared by SMEs in all Member States (Table 3). Among 27 Member States¹⁴:

- Only nine Member States (Austria, Belgium, Finland, Germany, Luxembourg, Malta, Poland, Sweden, and the United Kingdom) show a complete recovery in terms of number of SME enterprises, employment and value added.
- Eight Member States (Bulgaria, Czech Republic, Denmark, Estonia, Ireland, Lithuania, Netherlands and Slovenia) show a full recovery in number of SME enterprises and value added but not in SME employment.
- Two Member States (Hungary and Romania) show only a recovery in SME value added.
- One Member State (France) shows a recovery only in number of SME enterprises and SME employment but not in SME value added.
- One Member State (Latvia) shows a recovery in only the number of SME enterprises.
- Finally, in six Member States (Croatia, Cyprus, Greece, Italy, Portugal and Spain), SMEs have not yet recovered with regard to each of the 3 performance indicators (number of enterprises, employment and value added)

Table 3: Extent to which the SME sector has recovered in 2016 from the economic and financial crisis of 2008/2009

Member state	Number of enterprises	Employment	Value added
	Ratio of level in 2016 to level in 2008		
AT	1.12	1.10	1.19
BE	1.38	1.14	1.30
BG	1.19	0.96	1.31
CY	0.96	0.90	0.77
CZ	1.13	0.99	1.02
DE	1.36	1.28	1.34
DK	1.04	0.96	1.03
EE	1.37	0.95	1.30
EL	0.82	0.82	0.66
ES	0.95	0.79	0.77
EU-28	1.11	1.01	1.11
FI	1.03	1.06	1.11
FR	1.21	1.00	0.98
HR	0.92	0.91	0.90
HU	0.97	0.97	1.06
IE	1.05	0.89	1.07
IT	0.95	0.87	0.96
LT	1.29	0.97	1.25

Six Member States (CY, EL, ES, HR, IT, PT) show no recovery in any of the 3 SME performance indicators

¹⁴ Due to a break in the SME data series, Slovakia is excluded from the analysis.

LU	1.25	1.17	1.49
LV	1.42	0.91	0.96
MT	1.12	1.19	1.83
NL	1.89	0.98	1.12
PL	1.05	1.01	1.04
PT	0.86	0.85	0.92
RO	0.92	0.91	1.12
SE	1.20	1.08	1.36
SI	1.27	0.99	1.03
UK	1.14	1.10	1.32

Source: Eurostat, National Statistical Offices, and DIW Econ

Note: Slovakia is excluded from the analysis because of a break in the data series

4. The performance of EU-28 SMEs in comparison to SMEs in selected non-EU countries

While SMEs are present in all economies of the world, comprehensive and timely information on their performance is much more limited. This section compares and contrasts the recent trends in SME employment and value added in the USA, Japan, Brazil and Russia.¹⁵

The employment and value added performance of SMEs in Japan, the USA and the EU-28 differed markedly over the last few years:

- on average, in 2014 and 2015¹⁶, SME employment and value added grew more rapidly in the USA than in the EU-28 (Figure 20);
- in contrast, SME employment and value added declined over the same period in Japan.

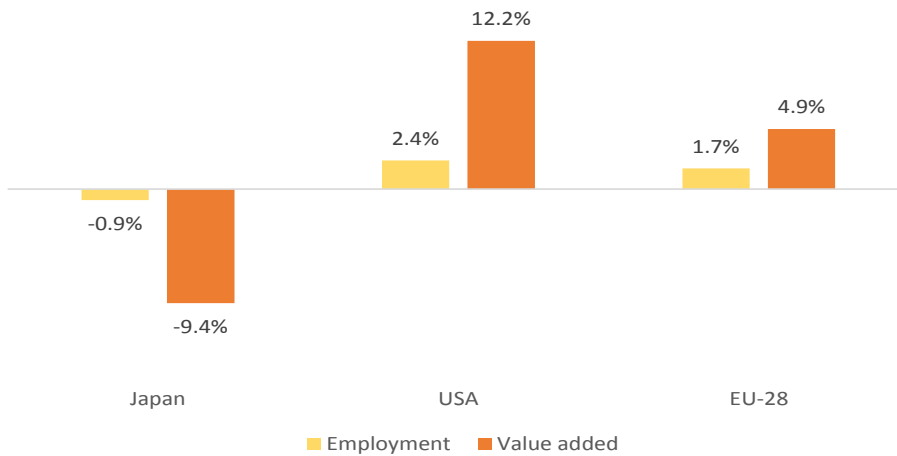
Moreover, SME employment in Japan declined again in 2016 while it continued to expand at a moderate rate in the EU-28 (Figure 21).

US SMEs have performed better than EU-28 SMEs in 2014 and 2015

¹⁵ For a detailed comparison of the relative importance of SMEs in the USA, Japan and the EU-28, see the European Commission (2016) Annual Report on SMEs 2015/2016 – SME recovery continues, pages 22 to 26.

¹⁶ Data for 2016 SME employment and value added in the USA and value added in 2015 and 2016 were not yet available at the time this report was finalised.

Figure 20: Average annual change (in %) in 2014 and 2015 of SME employment and value added in Japan, the USA and the EU-28



Source: Eurostat, National Statistical Offices, and DIW Econ

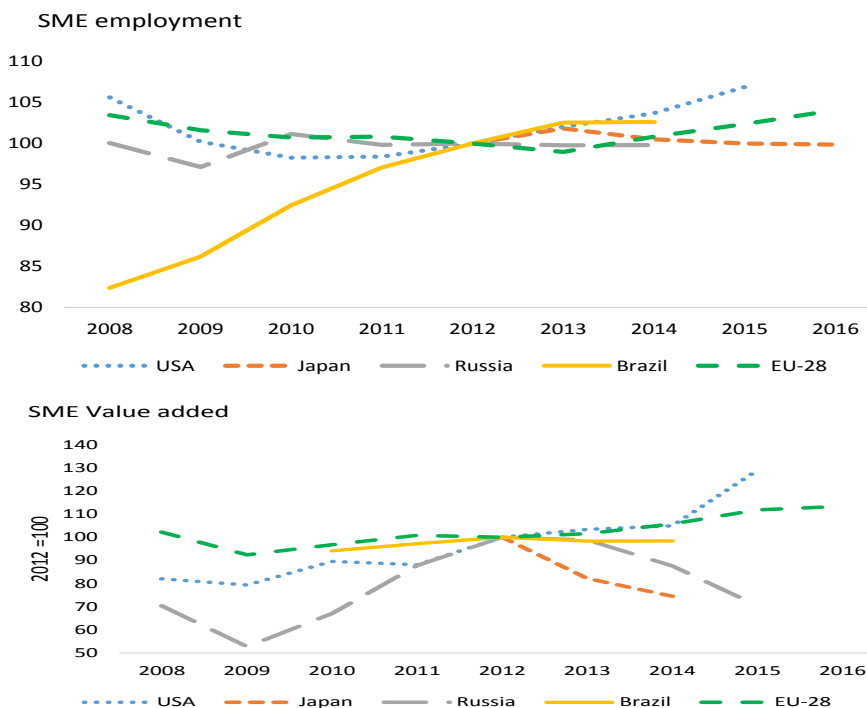
Note: Due to missing data, only the year 2014 is included in value added figure for Japan.

The differences in recent years in the evolution of SME employment in the USA and the EU-28 are particularly striking as, in the period of 2008 to 2012, SME employment in both countries followed broadly the same path with a slightly more accentuated decline and recovery in the USA.

In contrast, the pace of growth in SME value added in the USA exceeded that of SME value added in the EU-28 from 2008 onwards although the difference in pace became more pronounced in recent years.

The two emerging economies for which SME data are available, Brazil and Russia, show also very divergent trends since 2008 (Figure 21) with Russian SMEs posting a weaker SME performance in terms of both employment and value added in recent years (Figure 21).

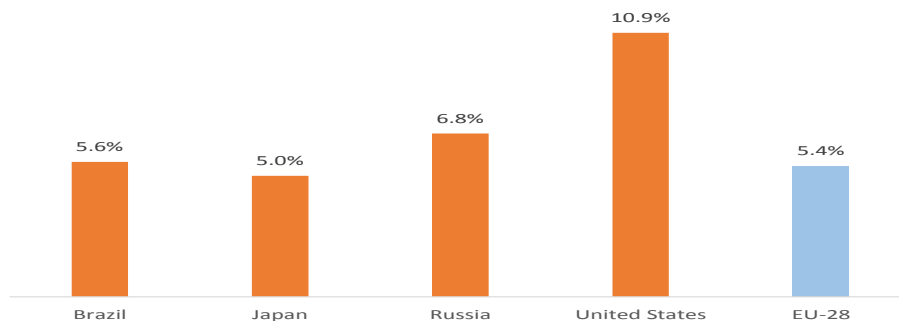
Figure 21: Recent evolution of SME employment and value added in the USA, Japan, Brazil, Russia and the EU-28 (2012=100)



Source: Eurostat, National Statistical Offices, and DIW Econ

While the much stronger US economy explains the better performance of US SMEs since 2010, the differences between Brazil, Japan, Russia and the EU-28 in cumulative growth in GDP (at constant prices) from 2010 to 2015 are much smaller (Figure 22) and do not explain the differences in SME performance among these three countries and the EU-28. Other structural and environmental factors are likely to be at play.

Figure 22: Cumulative growth in GDP (at constant prices) from 2010 to 2015



Source: IMF for Brazil, Japan, Russia and the United States, Eurostat for the EU-28

5. Detailed review of the value added, employment, productivity, export and profit performance of SMEs in the EU-28

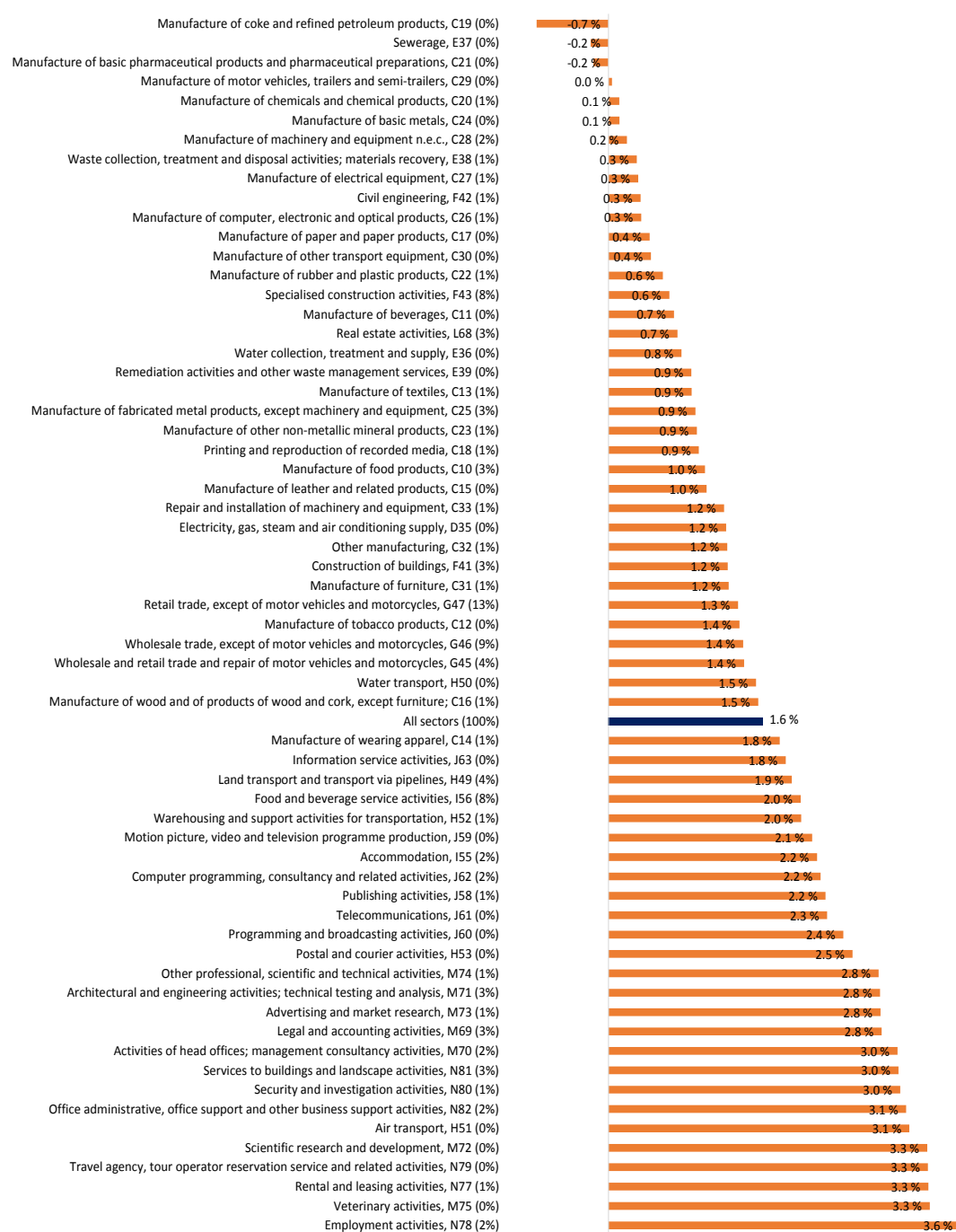
The present chapter analyses:

- at a very granular level the employment creation performance of SMEs in the EU-28, identifying those sectors in which SME employment grew very rapidly in 2016 or those sectors in which employment actually declined;
- the employment and value added performance of SMEs operating in sectors of different technology/knowledge intensity and export intensity;
- the evolution of EU-28 SME labour productivity;
- the evolution of the profitability of SMEs in light of the improving economic context.

5.1 Detailed information on the employment performance of SMEs

EU-28 SME employment grew by 1.6 % on average in 2015 and 2016. However, as previously noted, the employment growth performance of EU-28 SMEs during these two years varies greatly across different industries; from 3.6 % in 'employment activities' to -0.7 % in 'manufacture of coke and refined petroleum products' (Figure 23).

Figure 23: Average annual change (in %) in EU-28 SME employment by industry (NACE 2-digit classification) in 2015 and 2016



Source: Eurostat, National Statistical Offices, and DIW Econ
Note: % in brackets refer to the share of total employment in 2016.

EU-28 SME employment expanded in 2015 and 2016 in practically all of the 62 industries at 2-digit NACE classification for which 2016 data are available. This reflects the more balanced economy-wide growth of 2016, with some industries recording employment growth of 3% or more. However, the contribution to overall SME employment growth in the EU-28 was very unevenly distributed across the 62 industries¹⁷ (Figure 24).

¹⁷ The analysis focuses on 62 industries (2-digit NACE 2 industries) within the non-financial business sector. The 'mining and quarrying' sector is excluded from this analysis due to missing data.

Figure 24: EU-28 SME employment by industry (NACE 2-digit classification) in 2015 and 2016



Source: Eurostat, National Statistical Offices, and DIW Econ

Indeed, of the 62 industries covered by the analysis, 28 sectors (accounting for almost 70% of total SME employment in 2015) posted employment increases ranging from 0.5 % to 2.0 % in 2016, and only 21 sectors (accounting for 26% of total SME employment in 2015) experienced SME employment growth of 2.0% or more in 2016 (Figure 24).

5.2 Employment and value added performance of SMEs in different technology/knowledge and export-intensity sectors

The tables below (Table 4 to Table 7) break down the average change (in percentage) in 2015 and 2016 in EU-28 SME employment and EU-28 value added by industries of different technology intensity (in the case of manufacturing) and knowledge intensity (in the case of services), as well as different export intensity.¹⁸

The purpose of such a two-dimensional analysis is to identify any potential combined impact of technology/knowledge intensity and export intensity on recent employment and value added growth in the EU-28 SME sector.

Some of the cells in the two-dimensional tables are empty because no industry fits the two characteristics of that particular cell.

5.2.1 Changes in employment

Among the industries of different technology/knowledge intensity or export intensity, the strongest employment growth on average, in 2015 and 2016, was recorded by industries characterised by a) low export intensity and b) knowledge intensity (Table 5).

In fact, the stronger employment growth of the knowledge intensive service sector, combined with its 20 % share of total employment in 2015 (Table 4), more than offset employment growth weakness in the sectors of different technology intensity, particularly the low employment growth of the medium-high-tech and high-tech sectors (Table 5).

Regarding exports, sectors characterised by a high or a very high export intensity show in aggregate almost no employment growth.

On average in 2015 and 2016, the knowledge intensive and relatively low export oriented sectors were the main drivers of EU-28 SME employment and value added growth

¹⁸ See the Annex for definition of industry groupings.

Table 4: Share (in %) of total SME employment in industries of different technology/knowledge and export intensities – average of 2015 and 2016

		Technology Intensity - manufacturing				Knowledge Intensity - services		Total
		low-tech	medium-low-tech	medium-high-tech	high-tech	Less Intensive	Intensive	
Export Intensity	very low intensity	0.8 %	1.1 %			39.0 %	3.5 %	44.5 %
	low intensity	4.6 %	4.7 %			18.1 %	15.0 %	42.4 %
	medium intensity	4.2 %	1.8 %				2.1 %	8.1 %
	high intensity			3.8 %	0.8 %		0.2 %	4.8 %
	very high intensity			0.2 %				0.2 %
Total		9.6 %	7.6 %	4.0 %	0.8 %	57.2 %	20.8 %	100 %

Source: Eurostat, National Statistical Offices, and DIW Econ

Table 5: Change (in %) in EU-28 SME employment in sectors of different technology/knowledge and export intensities – average annual growth rate over 2015 and 2016

		Technology Intensity - manufacturing				Knowledge Intensity - services		Total
		low-tech	medium-low-tech	medium-high-tech	high-tech	Less Intensive	Intensive	
Export Intensity	very low intensity	0.9 %	1.2 %			1.6 %	3.0 %	1.7 %
	low intensity	1.1 %	0.9 %			2.0 %	2.7 %	2.0 %
	medium intensity	1.2 %	0.4 %				3.0 %	1.5 %
	high intensity			0.2 %	0.2 %		1.9 %	0.3 %
	very high intensity			0.4 %				0.4 %
Total		1.1 %	0.8 %	0.2 %	0.2 %	1.7 %	2.8 %	1.7 %

Source: Eurostat, National Statistical Offices, and DIW Econ

5.2.2 Changes in value added

An analysis of the distribution of average annual growth in 2015 and 2016 in EU-28 value added generated by SMEs yields a similar picture. The strongest growth was recorded in aggregate by knowledge intensive industries with low export intensity.

Table 6: Share (in %) of total value added produced by SMEs in industries of different technology/knowledge and export intensities – average of 2015 and 2016

		Technology Intensity - manufacturing				Knowledge Intensity - services		Total
		low-tech	medium-low-tech	medium-high-tech	high-tech	Less Intensive	Intensive	
Export Intensity	very low intensity	0.8 %	1.2 %			28.4 %	4.4 %	34.7 %
	low intensity	3.9 %	4.8 %			22.4 %	19.3 %	50.4 %
	medium intensity	3.3 %	2.1 %				2.0 %	7.3 %
	high intensity			5.4 %	1.3 %		0.6 %	7.3 %
	very high intensity			0.2 %				0.2 %
Total		8.0 %	8.1 %	5.6 %	1.3 %	50.7 %	26.3 %	100.0 %

Source: Eurostat, National Statistical Offices, and DIW Econ

Table 7: Change (in %) in total value added produced by SMEs in industries of different technology/knowledge and export intensities – average annual growth over 2015 and 2016

		Technology Intensity - manufacturing				Knowledge Intensity - services		Total
		low-tech	medium-low-tech	medium-high-tech	high-tech	Less Intensive	Intensive	
Export Intensity	very low intensity	3.1 %	3.0 %			3.2 %	5.1 %	3.4 %
	low intensity	3.2 %	2.8 %			3.6 %	5.0 %	4.0 %
	medium intensity	3.5 %	3.8 %				3.4 %	3.6 %
	high intensity			2.4 %	2.0 %		4.4 %	2.5 %
	very high intensity			0.7 %				0.7 %
Total		3.3 %	3.1 %	2.3 %	2.0 %	3.4 %	4.9 %	3.7 %

Source: Eurostat, National Statistical Offices, and DIW Econ

5.3 Evolution of SME labour productivity

As shown earlier in Figure 15, EU-28 SME employment grew by 0.6 % from 2008 to 2016, while value added generated by EU-28 SMEs increased by 10.9 % over the same period. These figures imply that apparent labour productivity (i.e. value added in current prices divided by employment) of EU-28 SMEs increased by 10.3 %.

However, apparent labour productivity is an imperfect measure of the productivity of a firm or an industry due to the fact that such a measure:

- includes a price component when value added at current prices is used to measure the output of the firm or industry;
- does not take into account factors of production other than labour, unlike multi-factor or total factor productivity analysis, which takes into account additional factors such as capital, energy, other raw materials, etc.

Unfortunately, the Structural Business Statistics database, which is the source of most of the SME data used in the present report, provides information only on SME value added at current prices and therefore only apparent labour productivity can be quantified for EU-28 SMEs.

The apparent labour productivity performance of EU-28 SMEs varies greatly across sectors. Over the period 2008 to 2016, it ranged from a fall of 22 % in ‘mining and quarrying’ to a rise of 23 % in ‘information and communication’.

To some extent, the difference in labour productivity performance reflects differences in the evolution of value added (for example in the ‘mining and quarrying’ sector) (Table 8).

In sectors where value added grew strongly from 2008 to 2016, the increases in value added were split roughly equally between labour productivity gains and employment increases (for example, in the ‘accommodation and food activities’, ‘administrative and support service activities’, information and communication, and ‘real estate activities’ industries).

In the two regulated industries of ‘electricity, gas, steam and air conditioning supply’ and ‘water supply, sewerage, waste management and remediation activities’, the increases in value added were largely accompanied by corresponding increases in employment and limited gains in apparent labour productivity.

In contrast, in a few industries, such as ‘construction’, ‘manufacturing’ and ‘wholesale and retail trade, repair of motor vehicles and motorcycles’ apparent labour productivity increased, despite a poor value added performance and fall in employment.

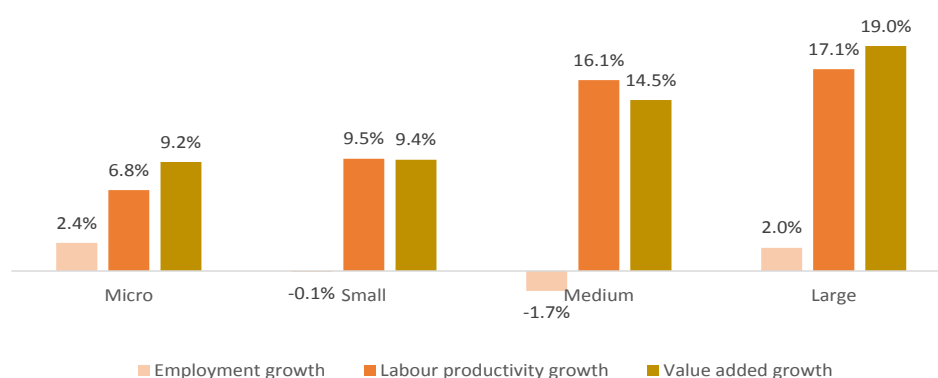
Table 8: Cumulative growth (in %) from 2008 to 2016 in EU-28 value added, apparent labour productivity and employment in different industries

Sector	Value added	Apparent labour productivity	Employment
Mining and quarrying	-39.0 %	-22.0 %	-17.0 %
Construction	-14.0 %	1.9 %	-15.8 %
Manufacturing	1.9 %	13.0 %	-11.1 %
Wholesale and retail trade, repair of motor vehicles and motorcycles	9.5 %	9.5 %	-0.1 %
Transportation and storage	10.0 %	7.4 %	2.6 %
<i>Total non-financial business sector</i>	<i>10.9 %</i>	<i>10.3 %</i>	<i>0.6 %</i>
Water supply, sewerage, waste management and remediation activities	20.4 %	6.4 %	14.0 %
Professional, scientific and technical activities	23.3 %	8.2 %	15.2 %
Accommodation and food activities	23.5 %	9.2 %	14.4 %
Electricity, gas, steam and air conditioning supply	24.1 %	4.3 %	19.9 %
Real estate activities	26.5 %	15.8 %	10.7 %
Administrative and support service activities	35.4 %	16.7 %	18.7 %
Information and communication	41.8 %	22.6 %	19.2 %

Source: Eurostat, National Statistical Offices, and DIW Econ

Apparent labour productivity performance also varies greatly across enterprise size classes:

- The size of the cumulative gains in apparent labour productivity from 2008 to 2016 increases with the enterprise size class, with the cumulative gains being almost 60 % bigger for medium-sized SMEs and 100 % bigger for large corporations in comparison with micro SMEs.
- Conversely, the link between increased employment and growth in value added is much stronger in terms of micro SMEs. Over the period 2008 to 2016, a one percentage point increase in micro SME value added resulted in a 0.3 percentage point increase in micro SME employment. In the same period, the corresponding figure was 0.1 percentage point for large corporations, negligible for small SMEs, and -0.1 percentage point for medium-sized SMEs.

Figure 25: Cumulative growth (in %) from 2008 to 2016 in EU-28 SME employment, value added and labour productivity by enterprise size class

Source: Eurostat, National Statistical Offices, and DIW Econ

5.4 SME profitability

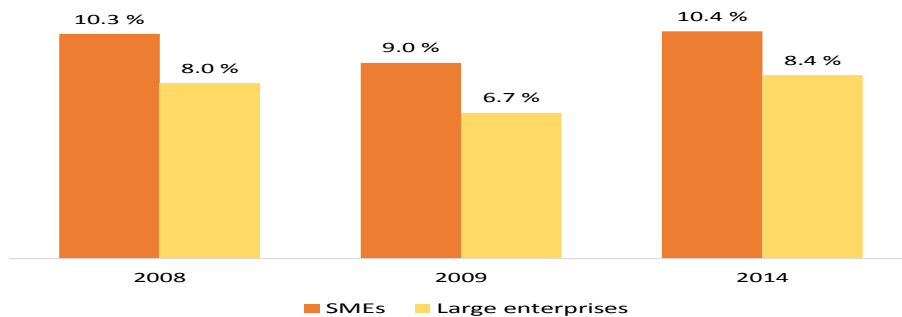
The previous section showed that, while employment fell from 2008 to 2016 in both 'manufacturing' and 'construction', value added contracted sharply in 'construction', but grew marginally in 'manufacturing'.

This raises the question of what happened to overall profitability in these two industries.¹⁹ The profit measure of interest is the profit rate (i.e. the ratio of gross operating surplus to total turnover).

On average, in the EU-28, profit rates of SMEs in the 'manufacturing' industry were higher than those of large enterprises in 2008, 2009 and 2014 (Figure 26).

Following the 2008/2009 economic and financial crisis, profit rates in the 'manufacturing' industry fell by more than one percentage point for both enterprise classes. However, by 2014, both profit rates had fully recovered, slightly exceeding their 2008 levels.

Figure 26: Profit rate in the manufacturing sector - SMEs and Large Enterprises in the EU-28 in 2008, 2009 and 2014



Source: Eurostat

Note: The EU-28 excludes Belgium, France, Luxembourg, Malta and the Netherlands in each year due to missing data.

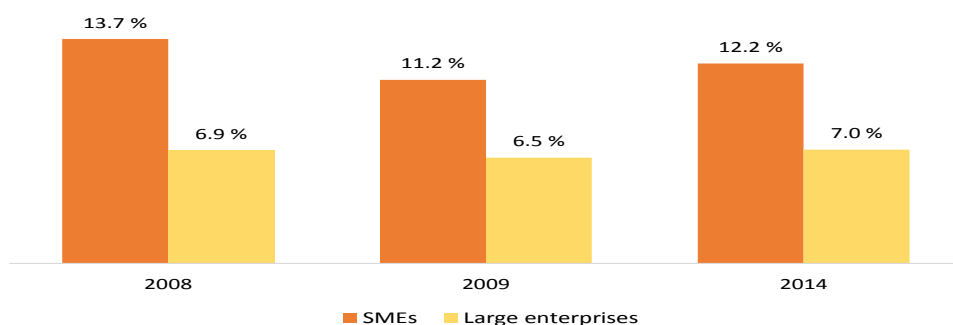
In terms of the EU-28 'construction' sector, the SME profit rate was 20 % to 30 % higher than the profit rate of large enterprises in 2008, 2009 and 2014 (Figure 27).

However, in contrast to the pattern observed in 'manufacturing', the impact of the economic and financial crisis on 'construction' profitability and recovery differs for the two enterprise classes:

- The profit rate of EU-28 large enterprises decreased marginally by 0.4 percentage point from 2008 to 2009; however, by 2014, the profit rate had recovered and exceeded its 2008 level by 0.1 percentage point.
- For EU-28 SMEs, the profit rate fell by 2.5 percentage points from 2008 to 2009, and by 2014, it had only partially recovered, remaining 1.5 percentage points below its 2008 level.

¹⁹ These are the only two sectors for which there are sufficient data in the Structural Business database for undertaking a pan-European analysis of recent profitability developments.

Figure 27: Profit rates in the construction sector - SMEs and Large Enterprises in the EU-28 in 2008, 2009 and 2014



Source: Eurostat

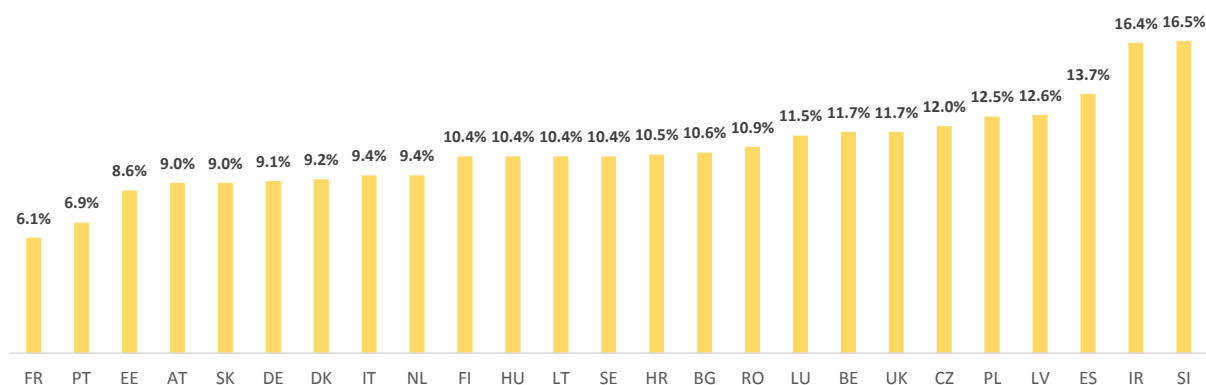
Note: The EU-28 average excludes Cyprus, Greece, and Malta in each year due to missing data.

In 2014, the most recent year for which data are available, the profit rate of SMEs varied markedly across Member States (Figure 28):

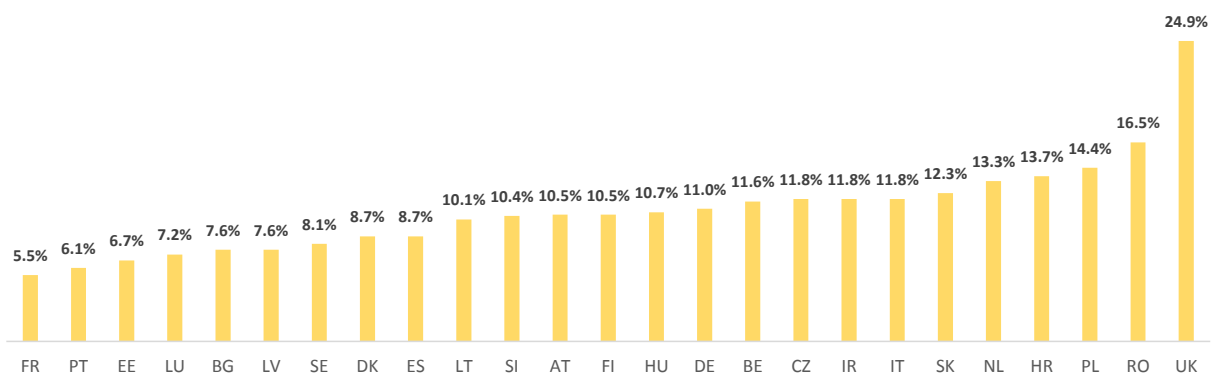
- In the 'construction' sector: from 6.1 % in France to 16.5 % in Slovenia;
- In the 'manufacturing' sector: from 5.5 % in France to 24.9 % in the United Kingdom.

Figure 28: SME profit rate in the manufacturing and construction sectors in 2014

Manufacturing



Construction



Source: Eurostat

Note: In the case of the manufacturing sector, the EU-28 excludes Belgium, Malta and the Netherlands due to missing data. In the case of the construction sector, the EU-28 average excludes Greece, Cyprus and Malta due to missing data.

6. The outlook for EU-28 SMEs in 2017 and 2018

Steady growth is projected for EU-28 SMEs in in 2017 and 2018 (Figure 29):²⁰

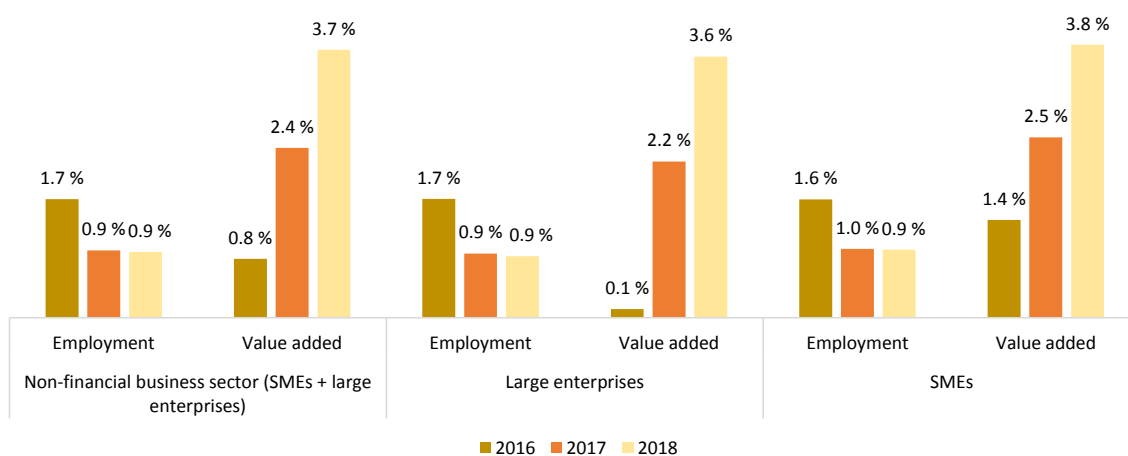
- EU-28 SME employment is forecast to grow by 1.0 % and 0.9 % respectively in 2017 and 2018;
- EU-28 SME value added is expected to rise by 2.5 % in 2017 and 3.8 % in 2018. The acceleration of growth in EU-28 SME value added reflects a combination of continued moderate increases in GDP at constant prices along with higher inflation (Figure 30).

Overall, SMEs are predicted to perform marginally better than large corporations in the non-financial business sector in 2017 and 2018.

SME employment to rise by 1.0% and 0.9% in 2017 and 2018

SME value added to increase by 2.5% and 3.8% in 2017 and 2018

Figure 29: Outlook for SMEs in the EU-28 in 2017 and 2018



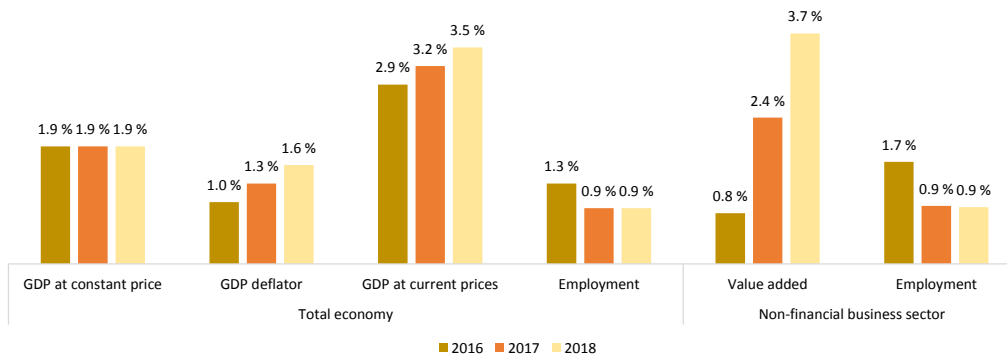
Source: Eurostat, National Statistical Offices, and DIW Econ

Whereas in 2016 and 2017 the growth in value added generated by the non-financial business sector is lower than the growth of GDP (at current prices), the opposite is forecast for 2018, with value added growth of the EU-28 non-financial business sector outpacing that of the economy as a whole.

In contrast, employment in 2017 and 2018 is expected to grow at the same rate in both the total economy and the non-financial business sector, after increasing more rapidly in 2016 in the non-financial business sector than in the total economy.

²⁰ The now-casting and forecasting methodology used by DIW Econ to produce now-casts for 2016 and forecasts for 2017 and 2018 are described in the document 'SME Performance Review 2017: Methodological Note on WP3', published on the SME Performance review website.

Figure 30: Outlook for the total EU-28 economy and the EU-28 non-financial business sector in 2017 and 2018

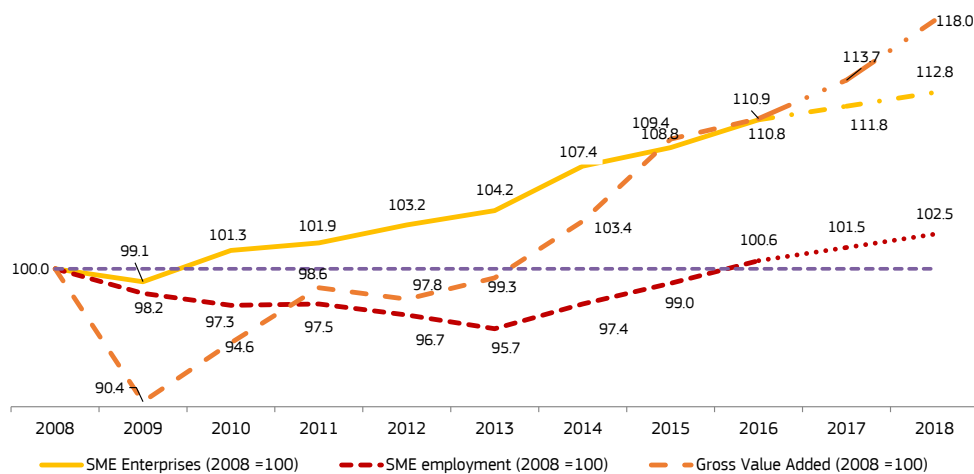


Source: European Commission Spring 2017 Economic Forecast and DIW econ

It is expected that in 2018, ten years after the onset of the financial and economic crisis of 2008/2009 (Figure 31);

- the number of SME enterprises in the non-financial business sector in the EU-28 will be 13 % higher than in 2008;
- SME employment in the EU-28 non-financial business sector will be 3 % higher than in 2008; and,
- the value added generated by SMEs in the non-financial business sector in the EU-28 will be 18 % higher than in 2008.

Figure 31: Recovery of EU-28 SMEs from the economic and financial crisis of 2008/2009



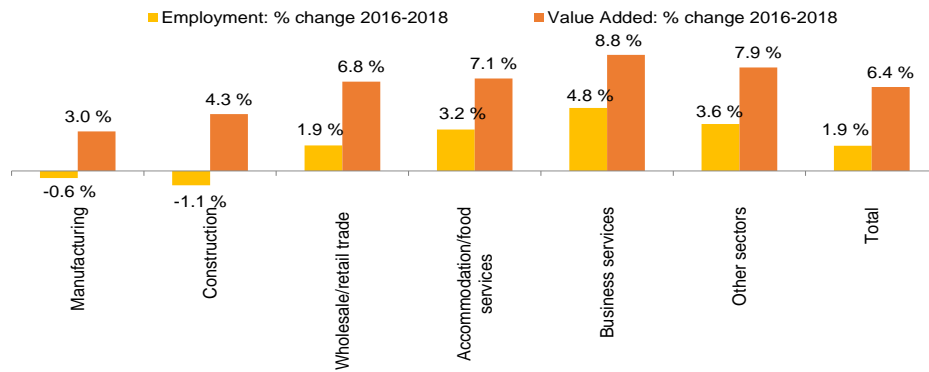
Source: Eurostat, National Statistical Offices, and DIW Econ

Note: The data for the Netherlands and Slovakia are marked by a break in 2013 and 2009 respectively.

On average, in 2017 and 2018, strong employment and value added growth is projected for EU-28 SMEs in the 'business services' industry, and to a lesser extent in the 'accommodation and food services' sector and in 'other sectors'.

In contrast, employment is expected to decline slightly on average in 2017 and 2018 in the 'manufacturing' and 'construction' sectors, despite increases in value added (Figure 32).

Figure 32: The outlook for EU-28 SMEs in different sectors in 2017 and 2018 – average annual growth rate

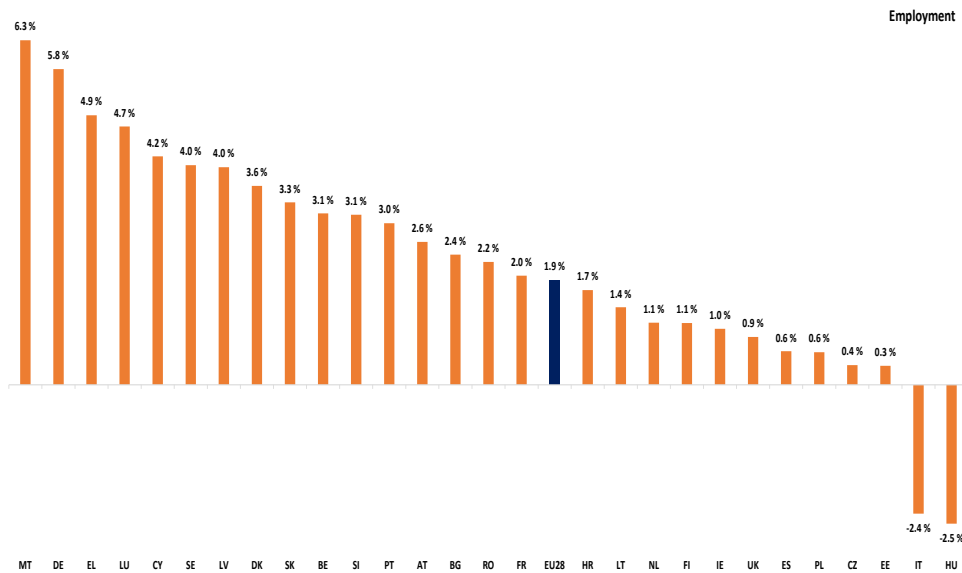


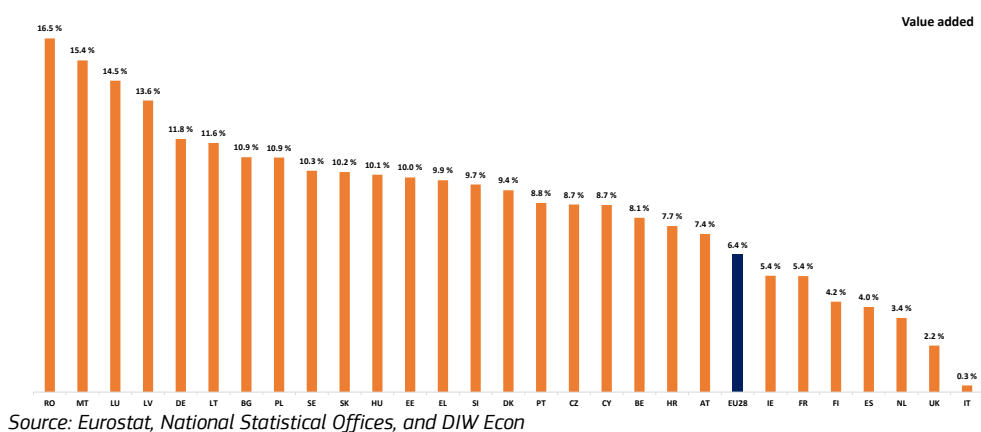
Source: Eurostat, National Statistical Offices, and DIW Econ

SME employment is forecast to increase from 2016 to 2018 in all but 2 Member States (Hungary and Italy) with 12 Member States projected to see SME employment grow cumulatively by 3 % or more from 2016 to 2018.

SME value added is also projected to increase cumulatively from 2016 to 2018 in all Member States, albeit only marginally in Italy. However, while SMEs in 12 of the Member States are expected to see value added grow cumulatively by an additional 10 % from 2016 to 2018, SMEs in four of the larger Member States (France, Italy, Spain and United Kingdom) are predicted to see a much lower cumulative rise in value added: 5.4 % or less from 2016 to 2018. (Figure 33)

Figure 33: The outlook for SME employment and value added in EU-28 Member States – cumulative increase in % in 2017 and 2018





Source: Eurostat, National Statistical Offices, and DIW Econ

In comparison to the forecast shown in the 2016/17 SME Annual Report, this year's projection shows:

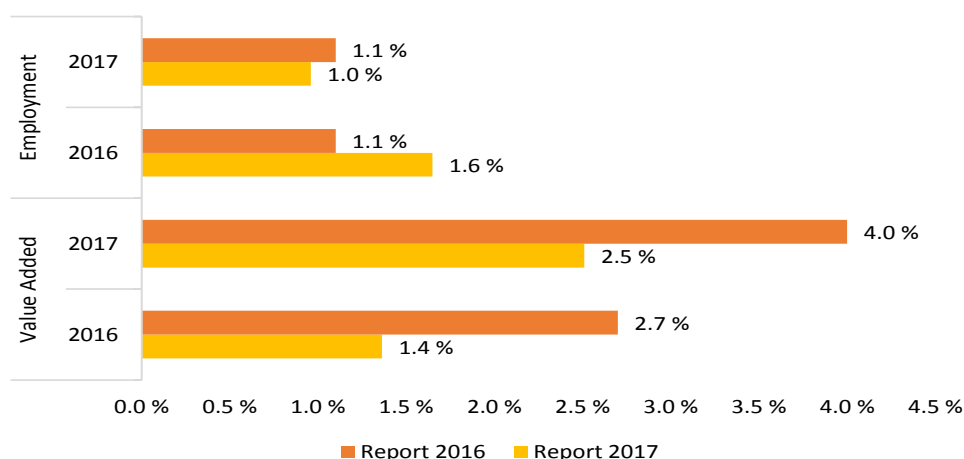
- stronger employment growth in 2016 by EU-28 SMEs and about the same rate of growth in 2017;
- Less strong growth in value added generated in 2016 and 2017 by EU-28 SMEs.

These forecasts are based on historical data, now-casts, and the European Commission Spring 2017 economic forecast. Compared to last year's report:

- more (and revised) historical data points (most importantly, for the years 2014 and 2015) are available. This helps to improve the quality of the forecasts, since the SME data used in the present analysis go back only to 2008;
- actual national accounts data for 2016 are used instead of now-casts. This improves the quality and accuracy of the starting point of the forecast;
- a new EC economic forecast has become available.²¹

All of these changes in data inputs directly affect the forecasts for 2017.

Figure 34: Comparison of forecasts of growth in EU-28 SME employment and value added



Source: DIW Econ

²¹ Spring 2017 Economic Forecast available at https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-forecasts/spring-2017-economic-forecast_en.



SELF EMPLOYED

Photo: Aysezgicmeli / Shutterstock.com

Part 2: Self-employment in the EU-28 and other selected countries

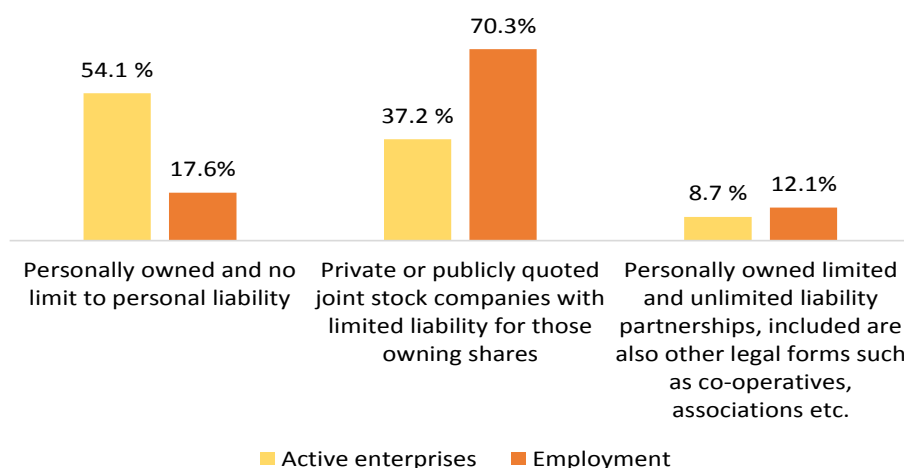
7. Self-employment in the EU-28

7.1 Introduction to the chapter on self-employment and SMEs

The discussion in Chapter 1 highlighted the fact that, in the EU-28 in 2014, 56 % of all active enterprises had 0 employees²² (see Box 1 in Chapter 1). In other words, the majority of firms in the business sector²³ are businesses with 0 employees run by self-employed individuals. The total number of enterprises run by self-employed individuals is even higher, as many small businesses of self-employed individuals also have employees.

An analysis of the relative importance of businesses of different legal forms yields a similar conclusion. Businesses personally owned by individuals and with no limit to their personal liability accounted for 54 % of all active enterprises in the EU-28 in 2014 (Figure 35) Such businesses are typically run by self-employed individuals, rather than being passively owned by the individual and run by someone else. In which case, it would no longer count as self-employment. Moreover, a number of self-employed individuals may have chosen to incorporate their business as a private company and the owners of some partnerships may be self-employed.

Figure 35: Share in total number of active enterprises and employment in the business sector of enterprises of different legal forms in the EU-28 in 2014



Source: Eurostat Structural Business Statistics

The few facts presented above clearly show that businesses run by self-employed individuals constitute a major component of the SME population and this chapter aims to contribute to developing a better understanding of self-employment by:

- presenting the general context for this special focus on self-employment in this year's Annual SME report, highlighting key findings from the academic literature on self-employment, and summarising the findings of case studies of individuals who have chosen to be self-employed;

²² Total employment in a firm and in an economy comprises employees (i.e. persons who are in paid employment positions) and self-employed persons.

²³ Business demography data are only available for the business sector as whole and not for the non-financial business sector alone. The business economy excludes the activities of holding companies.

- providing a number of key facts on the level and evolution of self-employment in the EU-28 as a whole, in individual EU-28 Member States and in selected countries outside the EU-28;
- identifying some of the factors which explain differences in the importance of self-employment across Member States;
- examining the employment creation performance of businesses created by self-employed individuals;
- presenting the results of a statistical analysis of the impact of self-employment on the economy.

In short, the present chapter, which focuses on the types of labour force participation of employed persons, complements the earlier discussion of the demography of business enterprises, as self-employed persons are typically also SMEs but not all SMEs are self-employed persons.

In 2016, in total, 30.6 million individuals were self-employed in the EU-28 (see Annex I.1)

Box 3

Definition of self-employment

Most of the descriptive analysis of self-employment in the EU-28 and Member States uses the Eurostat/Labour Force Statistics (LFS) data on self-employment.²⁴

Eurostat defines self-employed persons as persons *“who work in their own business, farm or professional practice. A self-employed person is considered to be working if she/he meets one of the following criteria: works for the purpose of earning profit, spends time on the operation of a business or is in the process of setting up his/her business.”*²⁵

Moreover, in the Labour Force Statistics (LFS), according to the Eurostat definitions, employed persons comprise persons aged 15 years and over who were in one of the following categories:

- a) persons who during the reference week worked for at least one hour for pay or profit or family gain
- b) persons who were not at work during the reference week but had a job or business from which they were temporarily absent.²⁶

One of these two conditions needs to be met for employees, self-employed persons and family workers to be considered as employed.

Therefore the Eurostat data on self-employment from the LFS take account of all self-employed persons, irrespective of the legal form under which they run their business. In other words, from a legal perspective, they could operate a business²⁷ with no legal distinction from their natural person or they could operate a business which is a distinct legal person.²⁸

However, when comparing self-employment trends in Australia, Canada, Japan, New Zealand and the United States with the EU-28, self-employment data from the

²⁴ National statistical organisations may also provide national analyses of self-employment using self-employment definitions which differ from LFS definition of self-employment.

²⁵ See metadata for Labour Force Series - detailed quarterly survey results (from 1998 onwards) available at http://ec.europa.eu/eurostat/cache/metadata/en/lfsq_esms.htm

²⁶ See metadata for Labour Force Series, op. cit.

²⁷ The concept of “operating a business” is used here in the general meaning of conducting an economic activity.

²⁸ In law, a ‘natural person’ is an individual human being with their own legal personality, as opposed to a ‘legal person’, which may be a private organisation (i.e. a business entity or non-governmental organisation) or a public (i.e. government) organisation.

International Labour Organisation (ILO) are used. The ILO definition of self-employment is conceptually similar to that of Eurostat. However, some non-EU countries such as the United States consider a person running an incorporated business as being employed by that business. The national self-employment data are therefore adjusted by ILO to ensure that such persons are also considered self-employed in the ILO data.

Box 4

Measures of self-employment used in the report

Three different measures of self-employment are used in the analysis:

- The **level of self-employment** refers to the number of persons who are self-employed.
- The **self-employment rate** of a particular group refers to the particular group's self-employment in total employment of that group.
- The **share of self-employment**²⁹ of a particular group (male, female, with tertiary education, etc.) refers to self-employment of the particular group in economy-wide self-employment.

7.2 General context and findings from the literature and case studies

7.2.1 General context

Self-employment, in itself, is not a new phenomenon. Certain economic sectors, such as the liberal professions, agriculture, and small-scale retail have always had a high level of self-employment. What is new, however, is the perception in recent years, based on press articles and social media, that self-employment is spreading from sectors which have traditionally had high self-employment levels, to almost all sectors of the economy. Another issue which has attracted considerable attention in recent years is the blurring, from a legal perspective, of the boundary between self-employment and a contractual employment relationship.

This chapter will examine, among other things, whether the perception of rapid growth in self-employment is reflected in the LFS data on self-employment.

A number of factors have had an impact on supply and demand for self-employment:

- The 'gig' economy³⁰ and the 'sharing' or 'collaborative' economy³¹ which saw the emergence of a multitude of platforms matching demand and supply of specific skills for individual short-duration assignments or jobs. However, in a number of cases, it is not yet totally clear from a legal point view, whether individuals undertaking such work are truly self-employed or in some form of an employment relationship with a platform. The precise

²⁹ It is useful to consider the self-employment rate in addition to the self-employment level, since developments in the level of self-employment reflect a combination of general labour market developments and potential shifts in the relative importance of employment and self-employment in total employment.

³⁰ A 'gig economy' is an economy in which temporary positions are common and economic entities use independent workers for short-term engagements. At the present time, it is impossible to assess how large the gig economy is, as neither the industry classification used by national statistical agencies to collect and organise production data nor the labour market statistics recognise the gig economy as a separate economic sector (see Annex I.2 for further details).

³¹ A 'collaborative economy' refers to business models where "activities are facilitated by collaborative platforms that create an open marketplace for the temporary usage of goods and services often provided by private individuals". (European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, A European agenda for the collaborative economy, Brussels, 2.6.2016, COM (2016) 356 final.

legal situation depends on the details of the contractual relationship between the individual and the platform. However, from a statistical point of view, all individuals offering their services through a platform are considered to be self-employed if they self-identify as being self-employment in the LFS.

- A change in attitude, especially by Millennials (Generation Y), towards operating as independents in the labour market, rather than entering into a long-term employer-employee relationship, through a desire for more flexible contractual work arrangements³². In 2012, 45% of youth in the EU indicated a preference for self-employment relative to 37% of adults³³.
- Stagnation of job offers, especially in the immediate aftermath of the 2008-09 financial and economic crisis.
- Public policies aiming to support or stimulate self-employment, such as the creation in France of a special legal status for the self-employed with low turnover ('auto-entrepreneur').
- Downsizing and outsourcing to independent workers of activities previously undertaken in-house by companies. These workers may have, in some cases, been laid off as part of the downsizing.

The resulting growth in self-employment can make a positive contribution to the overall economic performance of a country by stimulating entrepreneurship and increasing the economy's dynamism and flexibility to adjust to changing circumstances. However, growth in self-employment is not without potential downsides, such as financial insecurity, lower productivity (as self-employed businesses typically remain small and do not achieve sufficient scale), and the potential negative impact on the social security system, etc.

7.2.2 Key findings from the literature

The academic literature highlights the fact that entrepreneurship and self-employment, although overlapping to a great degree, are not one and the same thing. The focus of entrepreneurship is to explore/exploit market opportunities through the foundation and management of a business venture. On the other hand, self-employment as a status can represent two distinct phenomena. Firstly, it can be one of the ways in which entrepreneurial activities are carried out, and therefore represents a category of opportunity-seeking entrepreneurs. Secondly, self-employment may be borne out of necessity and may include those previously employed but now carrying out their same activity as a freelance or by starting a new business. These two types of self-employment (i.e. self-employment by desire or by necessity) originate from different drivers and have different impacts on the economy.

A recent report by Eurofound (2017)³⁴ shows that 60% of self-employed became self-employed out of opportunity and 20% because they had no alternatives for work. A further 16% became self-employed for both these reasons. The report then identifies five distinct groups of self-employed in the EU28. Two of these groups – roughly one in four self-employed – are characterised by economic dependence, low levels of autonomy and financial vulnerability.

Another important finding from the literature is that certain personality traits, such as openness to experience, extraversion, and risk tolerance have been found to be significantly linked to the probability of being self-employed. Other factors such as age and culture are also strongly correlated with the choice of transitioning to self-employment. Young adults, for example, are more likely to go into self-employment than

Self-employment may be borne out of necessity. In some cases, it may include those who were previously employed and are now carrying out the same activity as a freelance or by starting a new business.

³² For example, 67% percent of employed millennials (aged 18 to 34) want to leave the traditional work structure and become self-employed, according to a 2014 survey by Harris Poll and CreativeLive. (cited in Forbes online, Apr 27, 2016). A recent survey in the UK by Elance (2014, 'Generation Y and the Gigging Economy') found that, in 2013, between 77% and 87% of university graduates considered freelancing or gigging to be a highly attractive and lucrative career option.

³³ European Commission, 2012, "Entrepreneurship in the EU and beyond", Flash Eurobarometer 354.

³⁴ Eurofound (2017), Exploring self-employment in the European Union, Publications Office of the European Union, Luxembourg

older adults. In cultures in which taking risks is not penalised, or in which individualism predominates, the rate of self-employment may be higher than in cultures in which collectivism is institutionalised, or in which there is a generalised aversion to risk and uncertainty. These factors, together with the specific individual characteristics of the self-employed, such as personal knowledge, experience and professional competencies, contribute to determining whether or not self-employment is successful in resulting in a viable and sustainable employment opportunity.

Although access to finance does play a role in the rate of self-employment, it is not always the most important factor. Other considerations such as human capital, individual preferences, and obstacles to creating and running a business may have a greater impact on the choice of self-employment. Nonetheless, access to finance is important, since the would-be self-employed person who belongs to a low-wealth class is likely to face liquidity constraints at start-up phase and is also less likely to receive extra financing compared to the self-employed person from a wealthier household.

Obviously, national environmental variables will also have an impact on the occurrence of self-employment. Such factors include, for example, the image of self-employment/entrepreneurship, the stigma of failure, the extent of social protection coverage, the sectoral composition of the economy, the presence of employment opportunities, the tax environment, the existence of public measures in support of self-employment and labour market regulations.

A number of case studies of self-employed individuals were undertaken to gain first hand insights into the advantages and disadvantages of being self-employed, as viewed by self-employed persons. These case studies are presented in the companion Working Paper.

7.2.3 Key takeaways from the case studies of self-employed individuals

The case studies provide a real-life illustration of the challenges and difficulties faced by self-employed individuals which are highlighted by the literature on self-employment. These case studies represent a variety of countries, sectors and experiences (see Table below).

Table 9: Overview of case studies

Country	Sex	Business type	Motivation for self-employment
Cyprus	Female	Architecture and fabrication business	Was made redundant and decided to use this opportunity to become self-employed.
Finland	Female	Interior design business	Was made redundant during her pregnancy and thus decided to follow her dream of becoming an interior designer. However, employment opportunities are scarce in interior design and therefore she decided to start the journey of self-employment.
France	Male	Language school	Moved from the UK to France where he was previously self-employed.
France	Female	Ready-to-wear business	During her employee career, she increasingly felt the need for change and to open her own business and she felt that if she did not take the chance now, before retirement, she would never tempt self-employment.
Luxembourg	Female	Tearoom and grocery store	Had been considering self-employment for a while, but took the leap when she was made redundant.
Sweden	Male	E-commerce (sale of car parts)	After moving from France to Sweden right at the time of the economic crisis, he was having difficulties finding employment as a foreigner. He thus decided to start his journey towards self-

			employment.
Slovakia	Male	Flooring and installation	He had always wanted to become self-employed and enjoys the freedom associated with being one's own boss. Moreover, he was offered the position of technical representative for his company in a different country, which allowed him more freedom, and thus started his journey towards self-employment.

Source: London Economics, based on case studies in the companion Working Paper

Difficulties in obtaining financing, as well as high administrative burdens for the self-employed are identified most commonly as major issues. The availability of a good support system to assist with the process of becoming self-employed was seen as important. Those who received support suggested that this greatly helped them on the path to becoming self-employed. However, the self-employed interviewees were not always aware of the support available to them. As such, simply making support available is not enough. Indeed, several interviewees highlighted the need for support availability to be fully communicated so that self-employed individuals are aware of the opportunities available.

In addition to starting a business, interviewees also experienced challenges in growing their business. For example, some self-employed individuals highlighted the financial and administrative difficulties of hiring permanent staff. Others highlighted difficulties in marketing their activities, getting clients, and establishing a strong business presence. Further help to support the growth of businesses was seen as useful by several interviewees.

Despite these challenges, the self-employed individuals interviewed enjoyed the greater freedom and flexibility that being self-employed provides.

7.3 Self-employment in the EU-28 and major economies outside the EU-28

KEY FINDINGS

- The EU-28 self-employment rate (the share of self-employed in total employment) stood at 14% in 2016, broadly similar to the situation in Australia, Canada, New Zealand and Switzerland, and somewhat higher than in Japan and the United States.
- The self-employment rate has not increased markedly since 2000 in any of these countries.

In 2016, the self-employment rate stood at 14.0% in the EU-28, and varied markedly among Member States, ranging from 7.7% in Denmark to 29.5% in Greece. Before examining in greater detail the current extent of self-employment and trends in self-employment since 2000 in the EU-28 as whole and in EU-28 Member States, and the factors which could explain the differences in self-employment across Member States, the next sub-section compares and contrasts self-employment in the EU-28 and other major industrialised economies.

7.3.1 International comparisons of self-employment rates

The non-EU countries considered in the international comparison, namely Australia, Canada, Japan, New Zealand, Switzerland and United States fall into 2 groups

- The first group includes Australia, Canada, New Zealand, Switzerland. Among these countries, the self-employment rate ranged from 12 % (Switzerland) to 17 % (Australia and New-Zealand) (Figure 36). The EU-28 self-employment rate of 14 % is broadly in the middle of this group. It should be noted that the employment data in this comparative analysis includes all self-employed individuals from the age of 15 years and above. The EU-28 self-employment rate differs slightly from the one used later on in the report,

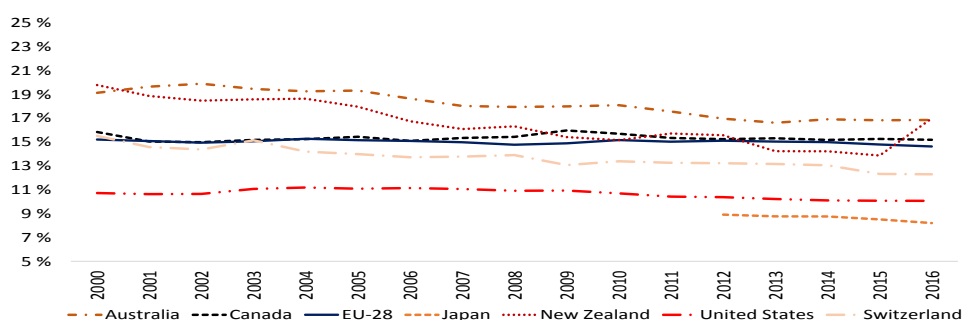
None of the non-EU countries considered in the analysis show a clear upward trend in the rate of self-employment since 2000

which utilises the more commonly used measure of individuals in the 15–64 year old age bracket.

- Secondly, Japan and the United States, in which the self-employment rate is somewhat lower, 8 % in the former case and 10 % in the latter.

It is noteworthy that, except for the jump in New Zealand in 2015, the self-employment rate in all countries is showing a slight decline or, at best, stability over the period 2000–16.

Figure 36: Self-employment rate (in %) in the EU-28 and selected non-EU countries, 2000–2016



Source: Eurostat, ILO, US Bureau of Labour Statistics

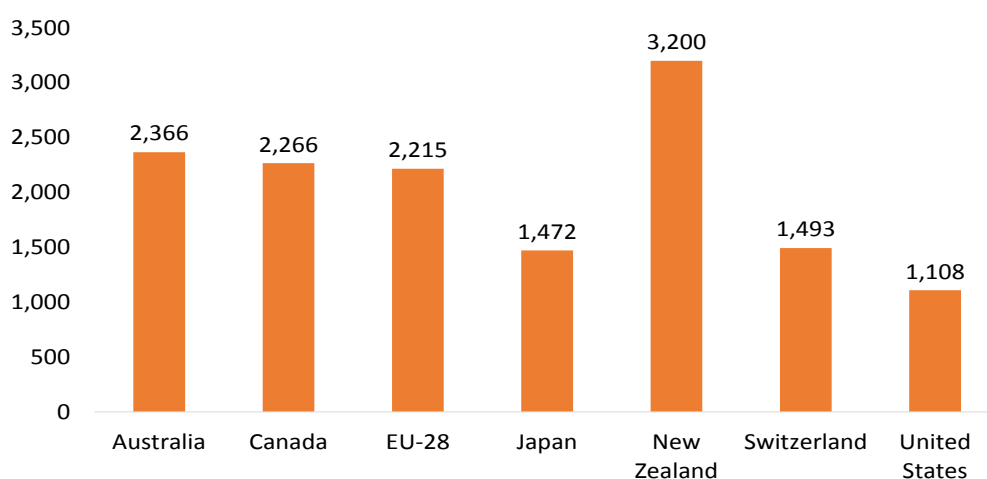
Note: EU-28 estimates sourced from Eurostat based on annual data up to 2016, estimates for all other countries sourced from own account workers, employer and employment information from the ILO. To account for any discrepancies in ILO estimates across countries, incorporated self-employment from the US Bureau of Labor Statistics was used to adjust ILO estimates. ILO and Eurostat data is based on self-employed individuals of 15+ years old, and incorporated US self-employment from the Bureau of Labor Statistics is based on 16+ year olds.

The number of self-employed persons per billion of GDP provides another perspective on the differing importance of self-employment across countries.

The EU-28 are very similar to Australia and Canada in this regard, whereas Japan, Switzerland and the United States have many fewer self-employed persons per billion of GDP. In contrast, New Zealand has almost 45 % more self-employed persons than the EU-28 (Figure 37).

The number of self-employed individuals per billion of GDP has followed a decreasing trend since 2000 across countries (see Annex I.6).

Figure 37: Number of self-employment individuals per billion of GDP in 2016



Source: Eurostat, ILO, US Bureau of Labor Statistics

Note: GDP measured in Purchasing Power Standard (PPS) current prices in 2016. EU-28 estimates are sourced from Eurostat, based on annual data up to 2016. Estimates for all other countries are sourced from own account workers, employer and employment information from the ILO. To account for any discrepancies in ILO estimates across countries, incorporated self-employment from the US Bureau of Labor Statistics was used to adjust ILO estimates. ILO and Eurostat data is based on 15+ year olds and incorporated US self-employment from the Bureau of Labor Statistics is based on 16+ year olds.

In the period following the economic and financial crisis, the contribution of changes in self-employment to changes in total employment varies greatly across countries. Moreover, self-employment and total employment do not exhibit consistent patterns of always moving either in the same direction or in the opposite direction (see Annex I.3 for further details).

Male self-employment accounted for about $\frac{2}{3}$ or more of total self-employment in 2016 in all the comparator countries as well as in the EU-28 (see Annex I.7). However, all the countries except for the United States show a marked upward trend in the share of female self-employment in total self-employment since 2000. This increase in the share of female self-employment is due to both increases in the number of self-employed females and decreases in the numbers of male self-employment, particularly after the 2008/09 economic downturn. In the United States, a downward trend is observed from 2000 to 2008 which is followed by an upward trend until 2013, and a slight reversal in 2014 and 2015 (see Annex I.7).

Although the share of female self-employment in total self-employment is increasing, the rate of female self-employment in 2016 was markedly lower than the rate of male self-employment in all the countries concerned (see Annex I.8). This may reflect that, in 2016, a larger proportion of working females preferred paid employment to self-employment.

In general, the self-employment rates of females and males have changed relatively little since 2000. The only exceptions are Australia, New Zealand (until 2015) and Switzerland, where the male self-employment rate shows a decline.

7.4 Self-employment in the EU-28 and EU-28 Member States in 2016

KEY FINDINGS

- In the EU-28, the self-employment rate varies greatly across Member States, ranging from 7.7% in Denmark to 29.5% in Greece in 2016.
- In the EU-28, most businesses run by self-employed do not have any employees.
- In 2016, the female self-employment rate is typically substantially lower than the male self-employment rate in EU-28 Member States.
- Foreign-born individuals account for 9.4% of total self-employment in the EU28 in 2016. This figure ranges from 2.6% in Hungary to 53.2% in Luxembourg. In the EU-28, about 1/3 of the foreign-born self-employed are from outside the EU-28.
- Among the self-employed in the EU-28 in 2016, 45 % had either an upper secondary or post-secondary non-tertiary education; 21 % had less than primary or lower secondary education and 35 % had a tertiary education.
- Five sectors ('agriculture, forestry and fishing', 'construction', 'manufacturing', 'professional, scientific and technical activities', and 'wholesale and retail trade') accounted for 62 % of self-employment in 2016 in the EU-28

This section provides information on self-employment:

- in the economy overall;
- by country of birth;
- in different industries;
- among individuals of different education levels;
- in different occupations.

In 2016, 30.6 million persons were self-employed in the EU-28. This is equivalent to 2,066 self-employed individuals for every billion of GDP (in euros).³⁵

Relative to the EU average of 2,066, western European Member States (AT, BE, DK, EE, DE, IE, FI, FR, LU, NL, and SE) generally had fewer self-employed workers per billion of GDP (in euros) (see Annex I.9).

Conversely, there were a relatively large number of self-employed per billion of GDP (in euros) in the UK, Southern Europe (CY, ES, IT, MT, PT and EL) and Central and Eastern Europe (BG, CZ, HU, HR, LV, LT, PL, RO, SL and SK).

The EU-wide self-employment rate (i.e., the ratio of the number of self-employed persons to total employment) stood at 14 % in 2016.

This rate of self-employment varied markedly across Member States, from 7.7 % in Denmark to 29.5 % in Greece (Figure 38):

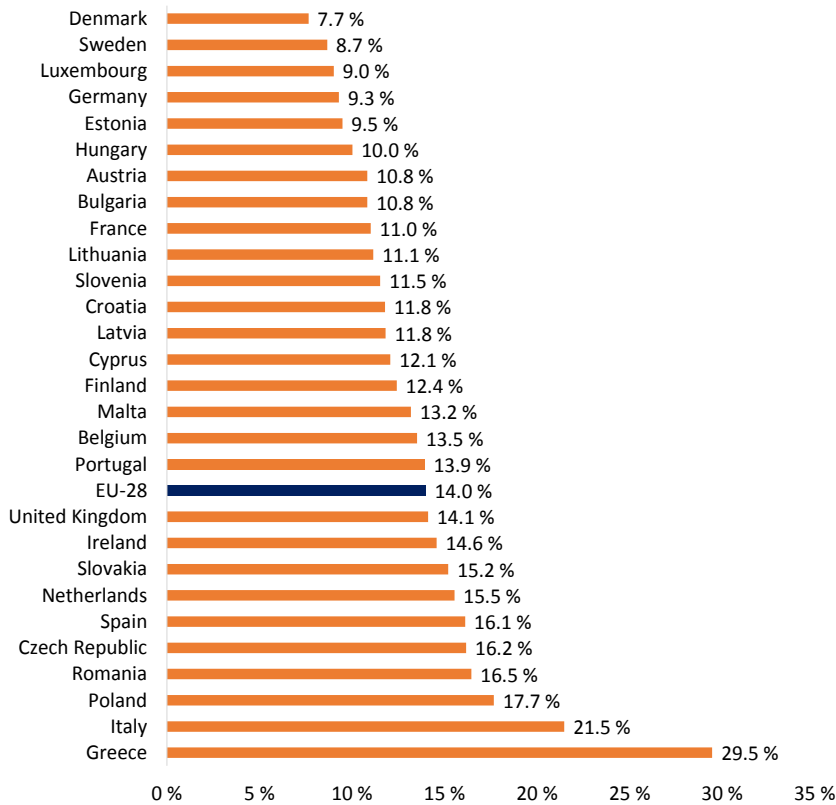
- five Member States had a self-employment rate of less than 10 % (DE, DK, EE, SE, LU)
- fifteen Member States had a self-employment rate of between 10 % and 15 % (AT, BE, BG, CY, FI, FR, HR, HU, IE, LT, LV, MT, PT, SI, UK)
- six Member States had a self-employment rate of between 15 % and 20 % (CZ, ES, NL, PL, RO, SK).

Only two Member States had a self-employment rate of over 20 %: Italy at 21.5 % and Greece, where almost a third of employed persons are self-employed, at 29.5 %.

The economies of western EU Member States rely much less on self-employment than central and southern European Member States

³⁵ These data differ slightly from those reported in the previous section, as the analysis in the present section focuses on self-employed in the 15 to 64 years range while the international comparison focused on self-employed 15 years old or older.

Figure 38: Self-employment rate (in %) in EU-28 Member States in 2016



Source: Eurostat

Note: Estimates based on available data at Member State level for 15-64 year olds

Self-employment (as a proportion of total employment) varied greatly in the EU28 in 2016 - from 7.7 % in Denmark to 29.5 % in Greece

Self-employment includes both entrepreneurs with 0 employees³⁶ and entrepreneurs with employees.

In 2016, entrepreneurs with 0 employees accounted for the bulk of EU-28 self-employment at 71.5 % (Figure 39). As noted in the introduction to this chapter, self-employed persons are deemed to be working in their own business, farm or professional practice, for the purpose of earning profit and not drawing a salary, spending time on the operation of a business or in the process of setting up a business. Conversely, when a business owner draws a regular salary from her/his business, s/he is considered to be an employee.

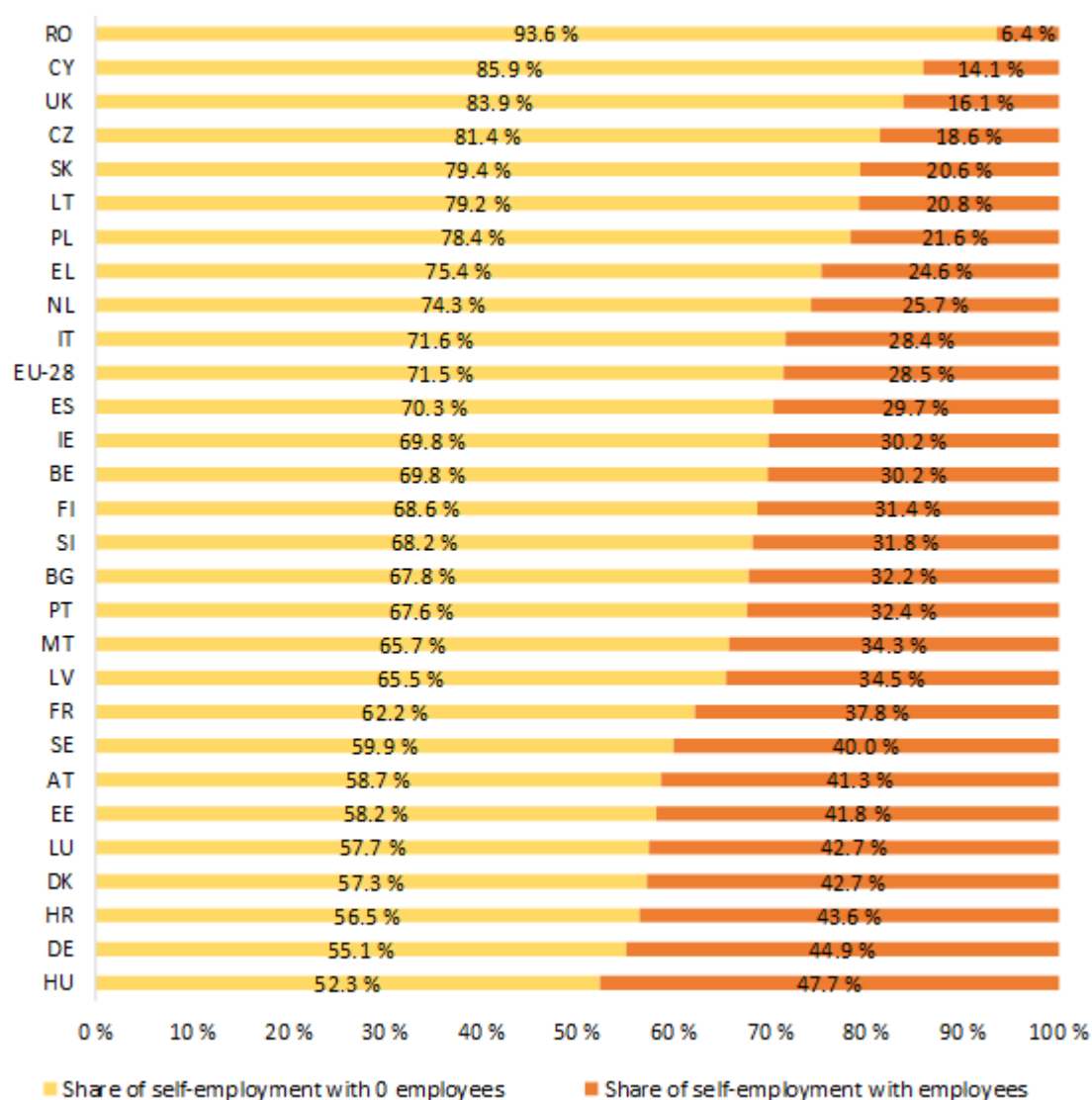
The relative importance of self-employment with 0 employees in total self-employment varies greatly across Member States.

In 2016, the share of self-employment with 0 employees was:

- between 50 % and 60 % of total self-employment in eight Member States (AT, DE, DK, EE, HR, HU, LU, SE)
- between 60 % and 70 % of total self-employment in nine Member States (BE, BG, IE, FI, FR, LV, MT, PT, SI)
- between 70 % and 80 % of self-employment in a further seven Member States (EL, ES, IT, LT, NL, PL, SK)
- over 80 % in four Member States (CY, CZ, RO, UK).

In all EU-28 Member States, the majority of self-employed entrepreneurs do not have employees

³⁶ These self-employed persons are also called 'own account workers' in the labour market statistics.

Figure 39: Self-employment without and with employees (in % of total self-employment) – 2016

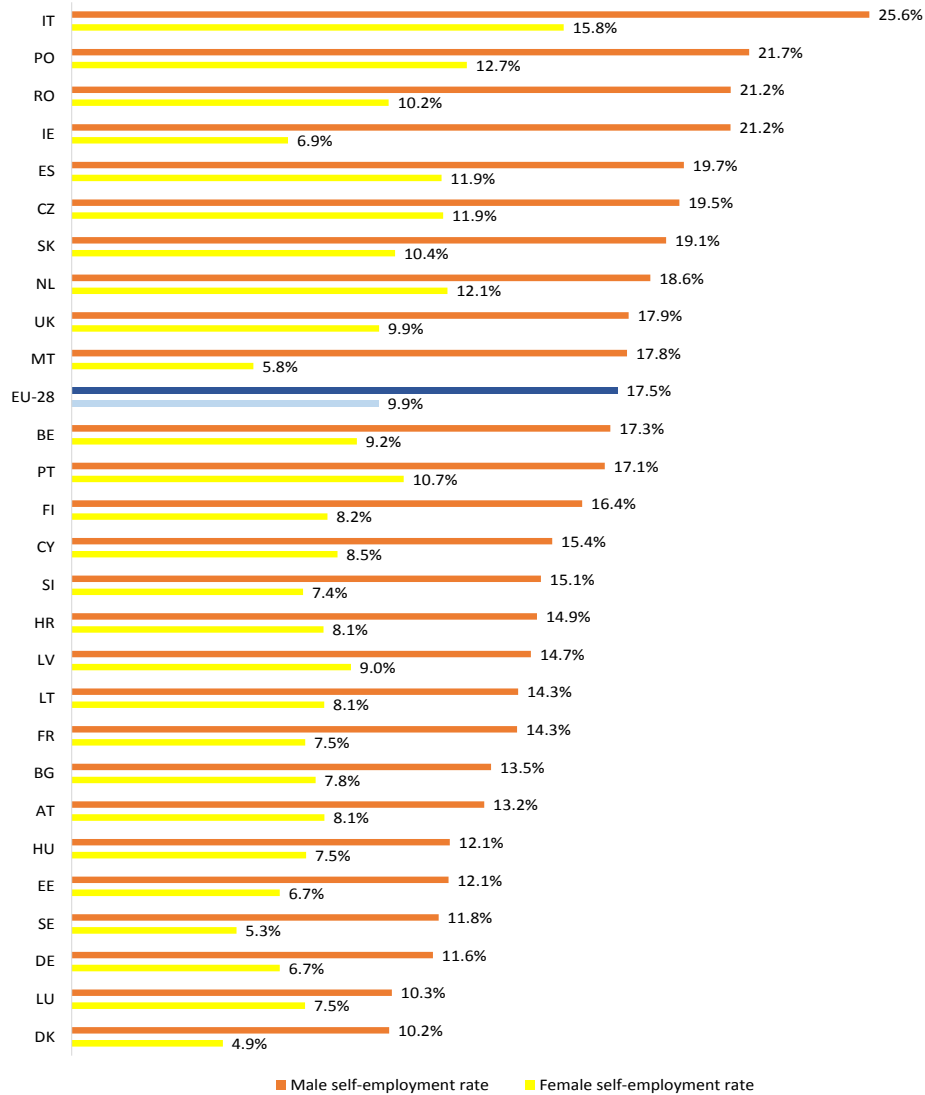
Source: Eurostat

Note: Estimates based on available data at Member State level for 15-64 year olds

The self-employment rate of males (i.e. the share of male self-employment in total male employment) is higher than that of females, even in Member States where the self-employment rate of males is relative low:

- the male self-employment rate ranges from 10.2% in Denmark to 25.6% Italy. The EU-28 rate is 17.5 %;
- the female self-employment rate ranges from 4.9 % in Denmark to 22.9 % in Greece, and the EU-28 rate is 9.9 %.

Figure 40: Female and male self-employment rate in the EU-28 in 2016



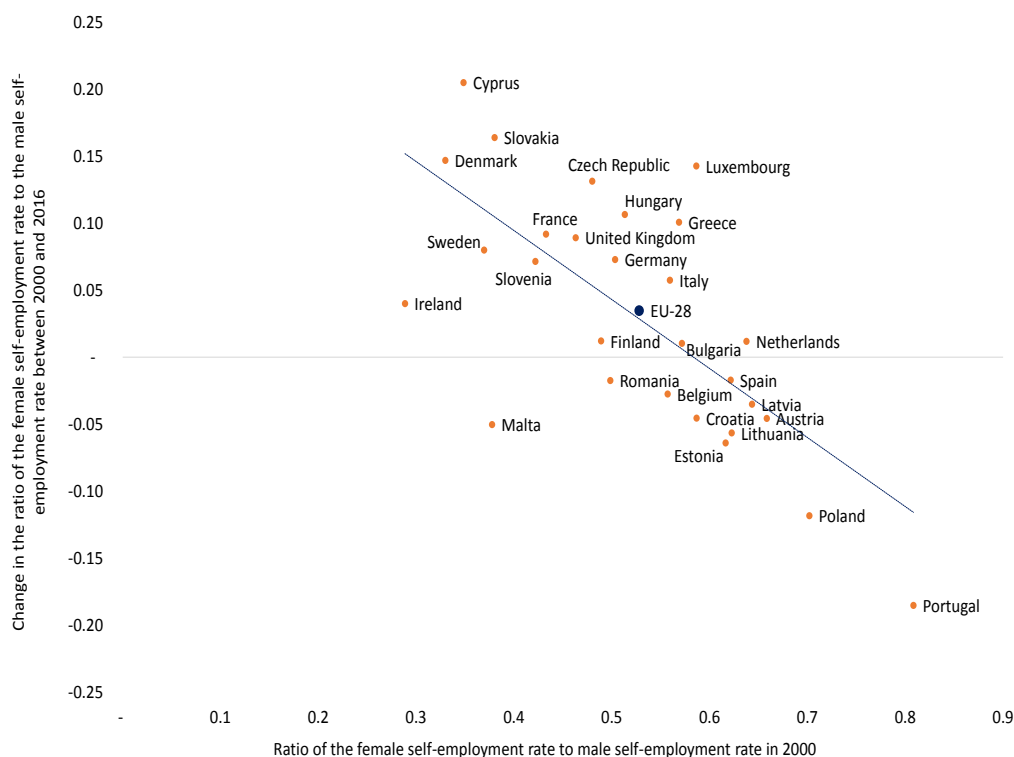
Source: Eurostat

Note: Estimates based on available data at Member State level for 15-64 year olds

A more detailed review of trends in the difference between the female and male self-employment rates shows that, since 2000, the self-employment rate of females has increased in many countries where the female self-employment rate was low relative to the male self-employment rate in 2000 and has reduced in a number of countries where the female self-employment rate was higher relative to the male self-employment rate in 2000.³⁷

³⁷ The ratio of the female self-employment rate to the male self-employment rate increased from 2000 to 2016 in all but 12 EU-28 Member States (the exceptions are Austria, Belgium, Croatia, Estonia, Latvia, Lithuania, Malta, Poland, Portugal, Romania and Spain (for details see Annex I.5).

Figure 41: Change in the ratio of the female self-employment rate to the male self-employment rate from 2000 to 2016



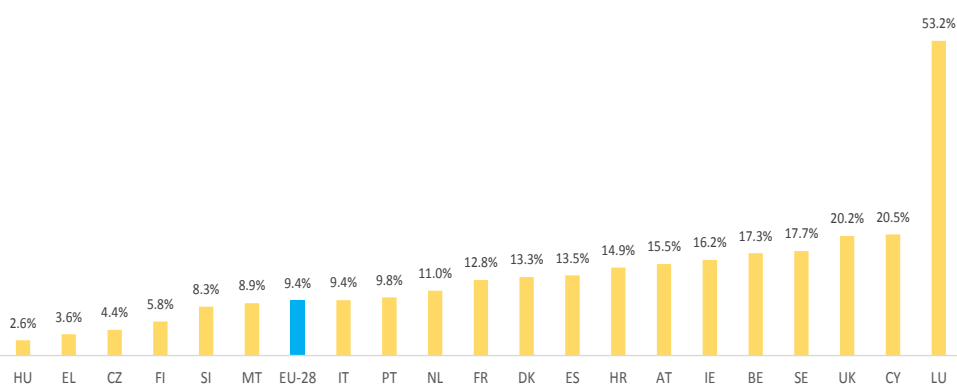
Source: Eurostat

Note: Estimates based on available data at Member State level for 15-64 year olds

The share of foreign-born self-employed stood at 9.4% in the EU-28 in 2016 and varied from 2.6% in Hungary to 53.2% in Luxembourg (Figure 42).

At the EU-28 level, self-employed born in an EU-28 Member State other than the one they reside in accounted for 6.0 % of total self-employment in 2016 and those born outside the EU-28 accounted for another 3.4 % of total self-employment (Figure 43)

Figure 42: Share (in %) of foreign born self-employed in total self-employment



Source: Eurostat

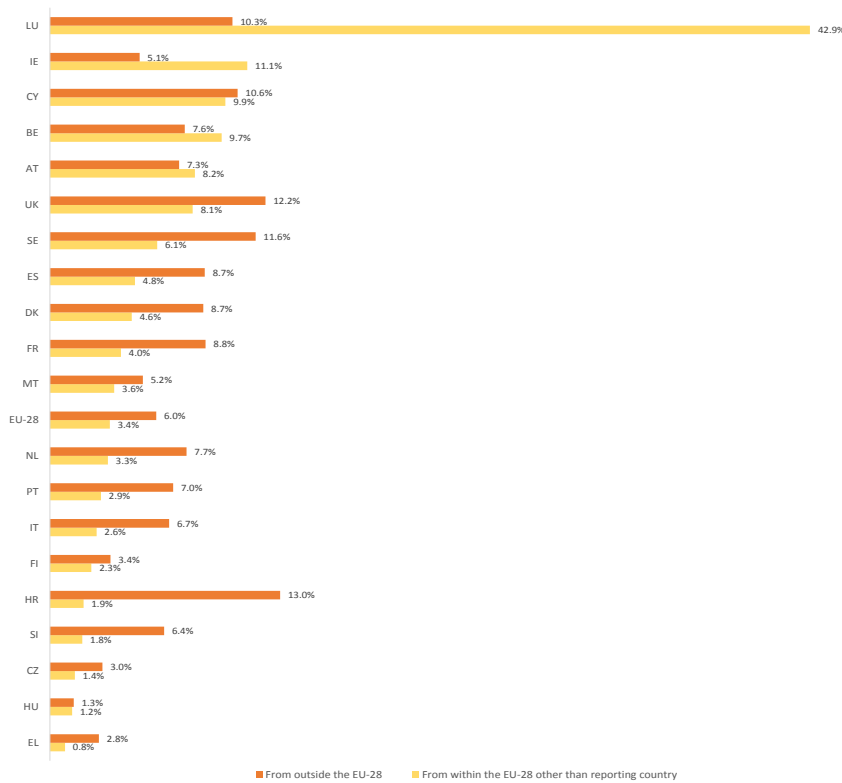
Note: Estimates based on available data at Member State level for 15-64 year olds. Countries not shown in the figure have missing data in the database.

Those Member States with a high proportion of self-employed born in another EU-28 Member State tend to have also a high proportion of self-employed born outside the EU-28. In the United Kingdom and in Cyprus foreign born self-employed account for 20 % of total self-employment and in Luxembourg this figure stands at 53.2 %. In contrast, in

three Member States (Czech Republic, Greece and Hungary) the proportion of foreign born employees is less than 5 %.

The shares of foreign-born EU-28 and non-EU-28 self-employed grew between 2006 and 2016 from 4.0 % to 6.0 % and 2.1 % to 3.4 % respectively. The share of foreign-born non-EU-28 self-employed increased in all Member States and the share of foreign-born EU-28 self-employed grew in all Member States except in the case of Greece, Hungary, Netherlands and Slovenia (see Annex I.6).

Figure 43: Self-employed born outside the country of residence in % of total self-employment in 2016



Source: Eurostat

Note: Estimates based on available data at Member State level for 15-64 year olds. Countries not shown in the figure have missing data in the database.

There are also notable differences in the patterns of self-employment across sectors:

- In 2016, five sectors ('agriculture, forestry and fishing', 'construction', 'manufacturing', 'professional, scientific and technical activities', and 'wholesale and retail trade') accounted for 62 % of self-employment in 2016 in the EU-28 (see Annex I.10 for details).
- A further 24 % of total self-employment in the EU-28 in 2016 was accounted for by 'accommodation and food service activities', 'administrative and support service activities', 'human health and social work activities', 'transportation and storage' and 'other service activities'.

The importance of self-employment within each sector also varies greatly.

- In the 'agriculture, forestry and fishing' sector, over half (50.5 %) of the employment in the EU-28 in this sector was in the form of self-employment (see Annex I.10 for details).

The self-employment rate in the EU28 varied greatly across sectors, ranging in 2016 from 50.5 % in 'agriculture, forestry and fishing' to 0.5 % in 'public administration'

- The rate of self-employment was also over 20 % in a further five sectors: ‘art, entertainment and recreation’, ‘construction’, ‘professional, scientific and technical activities’, ‘other service activities’, and ‘real estate activities’.

Moreover, the relative importance of self-employment with 0 employees also differs markedly across sectors in the EU-28.

- For example, self-employment with 0 employees accounted for more than 80 % of total self-employment in the following sectors: ‘agriculture, forestry and fishing’, ‘arts, entertainment and recreation’, and ‘education’.
- On the other hand, self-employment with 0 employees accounted for less than 60 % of total self-employment in: ‘accommodation and food service activities’, ‘manufacturing’, and ‘water supply’.

These variations may be due to the nature of the professional activities undertaken by the self-employed. In some sectors where freelancing is prevalent (e.g. the creative industries) and/or where the economic activities are much related to or depending on the self-employed individual (such as consultancy), it is not an option for the self-employed to take on employees, while in other sectors (such as manufacturing) additional human resources are required for effective and efficient business activities.³⁸

There are also wide differences in the level of education of the self-employed across Member States. In 2016, across the EU-28:

- 45 % of self-employed individuals had either an upper secondary or post-secondary non-tertiary education level;
- 21 % had a less than primary or lower secondary education level;
- 35 % had a tertiary education level (see Annex I.11).

Three distinct groups of Member States can be distinguished :

- three Member States (ES, MT, PT), in which the majority of the self-employed had less than primary, primary, and lower secondary education levels;
- eight Member States (BE, CY, DE, IE, FR, LU, NL, UK) in which the majority of the self-employed had a tertiary education level;
- 17 Member States (AT, BG, CZ, DK, EE, EL, FI, HR, HU, IT, LT, LV, PL, RO, SE, SI, SK), in which the majority of the self-employed had upper secondary and post-secondary non-tertiary education levels.

There is also a great deal of heterogeneity in the rate of self-employment at different education levels across Member States (see Annex I.11). In 2016, the self-employment rate for individuals with:

- less than primary and lower secondary education levels ranged from 4 % in HU to 44 % in EL, and averaged 16 % across the EU-28 in 2016;
- upper secondary and post-secondary non-tertiary education levels varied from 7 % in DE to 28 % in EL, and averaged 13 % across the EU-28;
- a tertiary education level ranged from 5 % in RO to 26 % in IT, and averaged 14 % across the EU-28.

The most common occupation for the self-employed in the EU-28 in 2016 was ‘Professionals’, representing 20.7 % of total self-employment (Figure 44) and 15.1 % of overall employment in this occupation (Figure 45).

Other occupations which accounted in 2016 for a relatively large share of total self-employment in the EU-28 include:

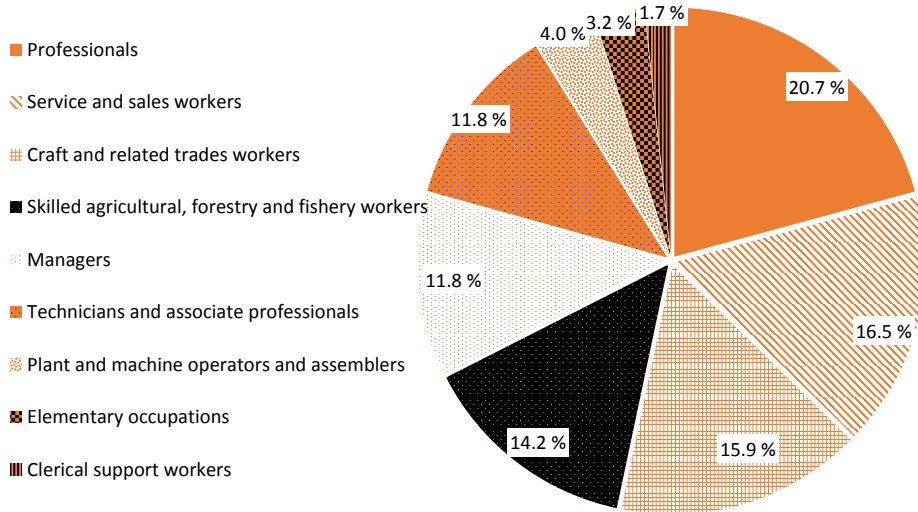
- ‘service and sales workers’, representing 16.5 % of total EU-28 self-employment, and 13.6 % of overall employment in this occupation;

The relative importance of self-employment with 0 employees also varied greatly across EU28 sectors in 2016: from 88 % in ‘agriculture’ to 42% in ‘accommodation and food services’

³⁸ See Lampel, J. and Germain, O. (2016).

- 'craft and related trades workers', accounting for 15.9 % of total EU-28 self-employment, and 19.1 % of overall employment in this occupation;
- 'skilled agricultural, forestry, and fishery workers', with 14.2 % of total EU-28 self-employment, and the highest share of overall self-employment of any occupation, at 60.1 %.

Figure 44: Share of EU-28 self-employment by occupation in the EU-28 - 2016



Source: Eurostat

Figure 45: EU-28 Self-employment rate by occupation in the EU-28, 2016



Source: Eurostat

At 60 %, 'skilled agricultural, forestry and fishery workers' had the highest self-employment rate of all occupations in the EU-28

7.5 Trends in self-employment since 2000 in the EU-28 and in EU-28 Member States

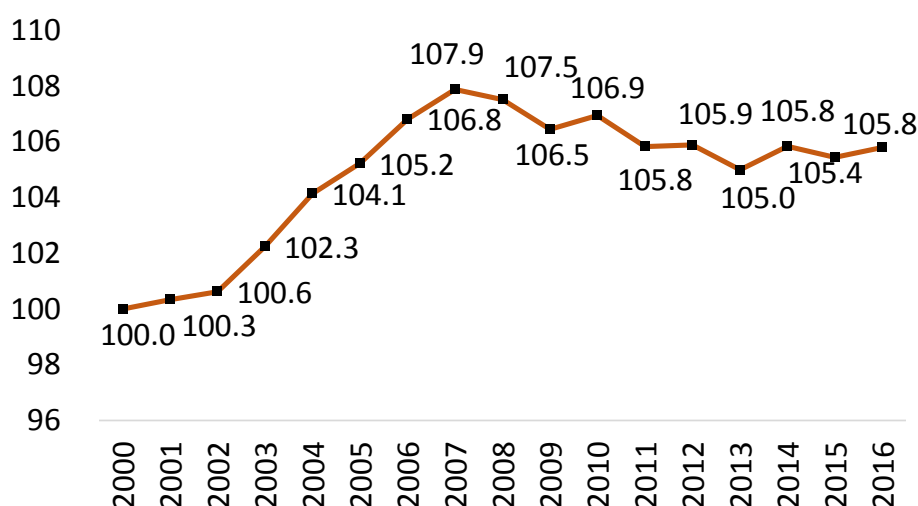
KEY FINDINGS

- The level of EU-28 self-employment has increased by about 6% from 2000 to 2016. But, the self-employment rate declined by about 4 percentage points.
- The decline in the EU-28 self-employment rate reflects a change in the relative shares of the 'agriculture' and the 'non-agriculture' sectors in the economy as the self-employment rates of both sectors increased slightly from 2000 to 2016.
- The self-employment rates in the EU-28 and EU-28 Member States do not systematically vary counter-cyclically.
- The difference between the female and male self-employment rates has reduced in the majority of the EU-28 Member States between 2000 and 2016.

The EU-28 level of self-employment in 2016 was 5.8 percentage points higher than in 2000, but 2.1 percentage points lower than its pre-crisis peak in 2007.

Between 2000 and 2007, the EU-28 level of self-employment rose steadily. However, during the financial crisis, the level of self-employment fell. Since 2013, the level of self-employment has remained broadly stable.

Figure 46: Self-employment level (2000=100) in the EU- 28 from 2000 to 2016



Source: Eurostat

Note: Level of self-employment is set to 100 in 2000. Croatia is included from 2002 onwards.

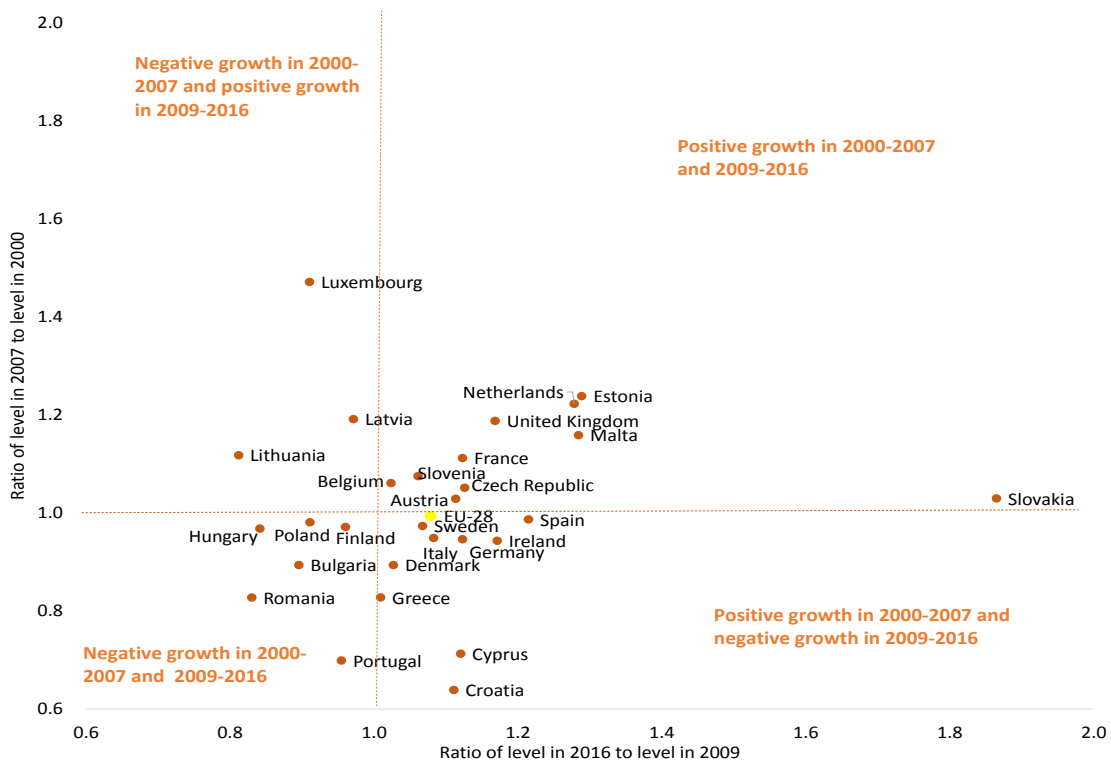
The change in the EU-28 self-employment level over time masks a large degree of heterogeneity across Member States (Figure 47):

- ten Member States (AT, BE, CZ, EE, FR, MT, NL, SK, SI, UK) experienced increases in self-employment levels both in the pre-crisis period (2000 to 2007) and in the post-crisis period (2009 to 2016);
- three Member States (LT, LU, LV) experienced a decrease in self-employment in the pre-crisis period and an increase in self-employment in the post-crisis period;
- nine Member States (CY, DE, DK, EL, ES, HR, IE, IT, SE) experienced an increase in self-employment levels in the pre-crisis period and a decrease in the post-crisis period;
- six Member States (BG, FI, HU, PL, PT, RO) experienced decreases in self-employment levels in both the pre-crisis and post-crisis periods.

The patterns of change in self-employment levels from 2000 to 2007 and from 2009 to 2016 vary greatly across Member States.

The largest increase in self-employment occurred in Slovakia, where the level of self-employment more than doubled between 2000 and 2016.³⁹

Figure 47: Ratio of the self-employment level in 2007 to level in 2000 and ratio of the self-employment level in 2016 to level in 2009



Source: Eurostat

Note: Croatia is included from 2002 onwards.

As shown earlier, the level of self-employment since 2000 shows two distinct trends at EU-28 level (Figure 46).

In contrast, the rate of self-employment (i.e. the ratio of self-employment to total employment) has fluctuated slightly since 2000, but has always remained within a narrow range (Figure 48).

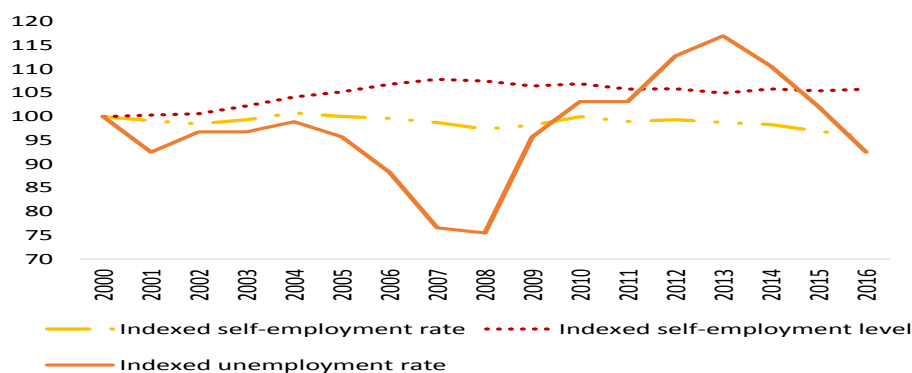
- Between 2000 and 2009, the self-employment rate shows a distinct cyclical pattern, with small peaks in 2000 and 2004, and small troughs in 2002 and 2008. Overall, the self-employment rate moved counter-cyclically (Figure 48).
- Since 2010, the self-employment rate has been declining, with the pace of decline accelerating slightly from 2014 onwards.

The difference between the patterns of change in the self-employment rate and the self-employment level reflects divergent trends in the growth of the levels of self-employment and employment.

For example, since 2014, the self-employment rate declined by somewhat more than the level of self-employment due to the overall level of employment increasing by more in percentage terms than the level of self-employment.

³⁹ The Statistical Office of the Slovak Republic was not aware of any methodological reason for this large increase.

Figure 48: EU-28 self-employment rate, self-employment level and unemployment rate (2000=100), 2000 - 2016



Source: Eurostat

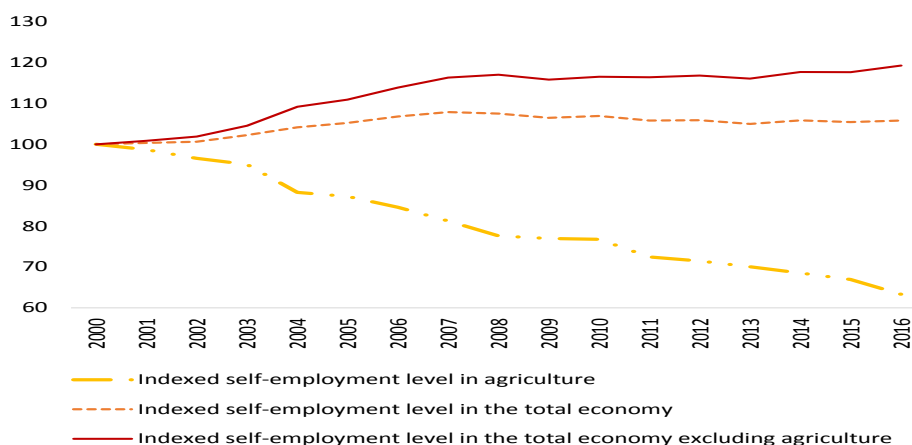
Note: For comparability of trends, the three indicators (self-employment rate, self employment level and unemployment rate) are indexed to 100 in 2000. Croatia is included from 2002 onwards.

The structural decline in the 'agricultural' sector has had a marked impact on the developments in the level of economy-wide self-employment and the self-employment rate in the EU-28.

The level of self-employment in EU-28 'agriculture' declined sharply by 37% from 2000 to 2016 whereas it increased by 19% in the economy excluding agriculture (Figure 49).

However, the decline of salaried employment in EU-28 'agriculture' was even larger and, as a result, the self-employment rate in 'agriculture' actually increased by 2% in the EU-28 from 2000 to 2016.⁴⁰ At the same time the self-employment rate in the non-agriculture economy of the EU-28 increased by 5% (Figure 50).

Figure 49: EU-28 self-employment level in 'agriculture', the total economy and the total economy excluding agriculture (2000=100), 2000 - 2016



Source: Eurostat

Note: For comparability of trends, the three indicators (self-employment rate, self employment level and unemployment rate) are indexed to 100 in 2000. Croatia is included from 2002 onwards.

⁴⁰ In the EU-28, 12 Member States (Belgium, Czech Republic, Germany, Greece, France, Latvia, Malta, Netherlands, Romania, Slovenia, Slovakia and the United Kingdom) show an increase in the self-employment rate in agriculture from 2000 to 2016 (see Annex I.14).

Figure 50: EU-28 self-employment rate in 'agriculture', the total economy and the total economy excluding agriculture (2000=100) 2000 - 2016



Source: Eurostat

Note: For comparability of trends, the three indicators (self-employment rate, self employment level and unemployment rate) are indexed to 100 in 2000. Croatia is included from 2002 onwards.

Despite increases in the self-employment rate in 'agriculture' and in the total economy excluding agriculture, the economy wide self-employment rate declined due to the combination of a sharp decrease in the share of 'agriculture' employment in total employment and a higher self-employment rate in 'agriculture' than in the economy excluding agriculture.

An analysis of the relationship between changes in the self-employment rate and the unemployment rate shows no consistent patterns (see Annex I.15 for Member State specific information).⁴¹

- In some countries when the unemployment rate decreases, the self-employment rate increases, whereas in other countries self-employment decreases too.
- Similarly, in some countries when the unemployment rate increases, the self-employment rate also increases, whilst in other countries the opposite occurs.

As with changes in self-employment levels over time, there is also a great deal of variability in the changes in self-employment rates across Member States.

Despite the relatively limited variation in the EU-28 self-employment rate over time, the distribution of self-employment by education level has changed markedly over this period (See Annex I.16 for details):

- The share of the self-employed with a tertiary education level grew steadily from 20.9 % to 34.6 % from 2000 to 2016.
- This increase was accompanied by a steady decline in the share of the self-employed with less than primary, primary, and lower secondary education levels: from 36.2 % in 2000 to 20.7 % in 2016.

Changes in self-employment rates and unemployment rates do not show a consistent pattern across Member States

The share of EU-28 self-employed with tertiary education has grown steadily since 2000. In contrast, the share of EU-28 self-employed with less than secondary education has decreased.

⁴¹ The relationship between changes in unemployment and self-employment may be impacted by changes in employers' offers of salaried employment and self-employment opportunities arising from changes in social contributions and taxes

- The share of the self-employed with an upper secondary and post-secondary non-tertiary education level remained comparatively stable, increasing slightly from 42.9 % to 44.7 %.

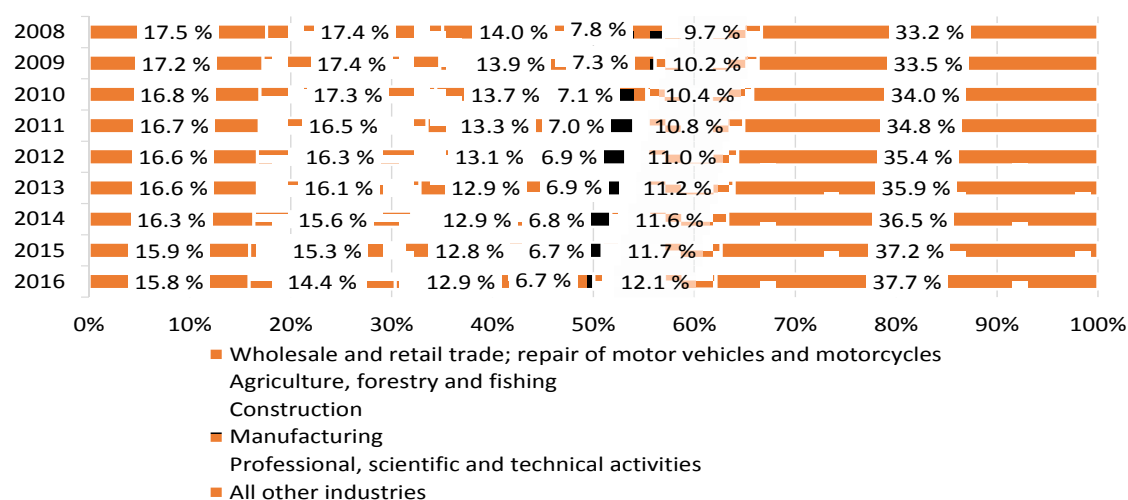
The evolution of these three different patterns of change reflects a combination of changes in the relative size of the three education groups within the general population, along with changes in the self-employment rates of each educational level. The picture across the EU-28 is highly varied, however:

- the self-employment rate fell from 2000 to 2016 across all education levels in only four Member States (CY, HR, HU, LT) (see Table 23 in Annex I.16);
- while conversely, the self-employment rate rose from 2000 to 2016 across all education levels in only three Member States (NL, SK, UK).

The lack of a clear relationship between the unemployment rate and the overall self-employment rate, which has already been highlighted for the EU-28 as a whole, is also true of the unemployment rate and the three education categories (see Annex I.16).

The period 2008 to 2016 has also been marked at EU-28 level by a steady decline in the share of self-employment accounted for by the sectors of 'agriculture, forestry and fishing', 'construction', 'manufacturing' and 'wholesale and retail trade'. In contrast, the share of self-employment accounted for by 'professional, scientific and technical activities' and 'other industries' rose steadily (Figure 51).

Figure 51: EU-28 self-employment shares by industry, 2008-2016



Source: Eurostat

Note: All other sectors includes: 'Human health and social work activities', 'Transportation and storage', 'Administrative and support service activities', 'information and communication', 'Arts, entertainment and recreation', 'Education', 'Financial and insurance activities', 'Real estate activities', 'Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use', 'Public administration and defence', 'Compulsory social security', 'Water supply; sewerage, waste management and remediation activities', 'Electricity, gas, steam and air conditioning supply', 'Mining and quarrying', 'Accommodation and food service activities' and 'Other service activities'.

The differences in the evolution of the self-employment shares of different sectors reflect a combination of changes in the relative economic importance of the different sectors, along with changes in the self-employment rate within each sector.

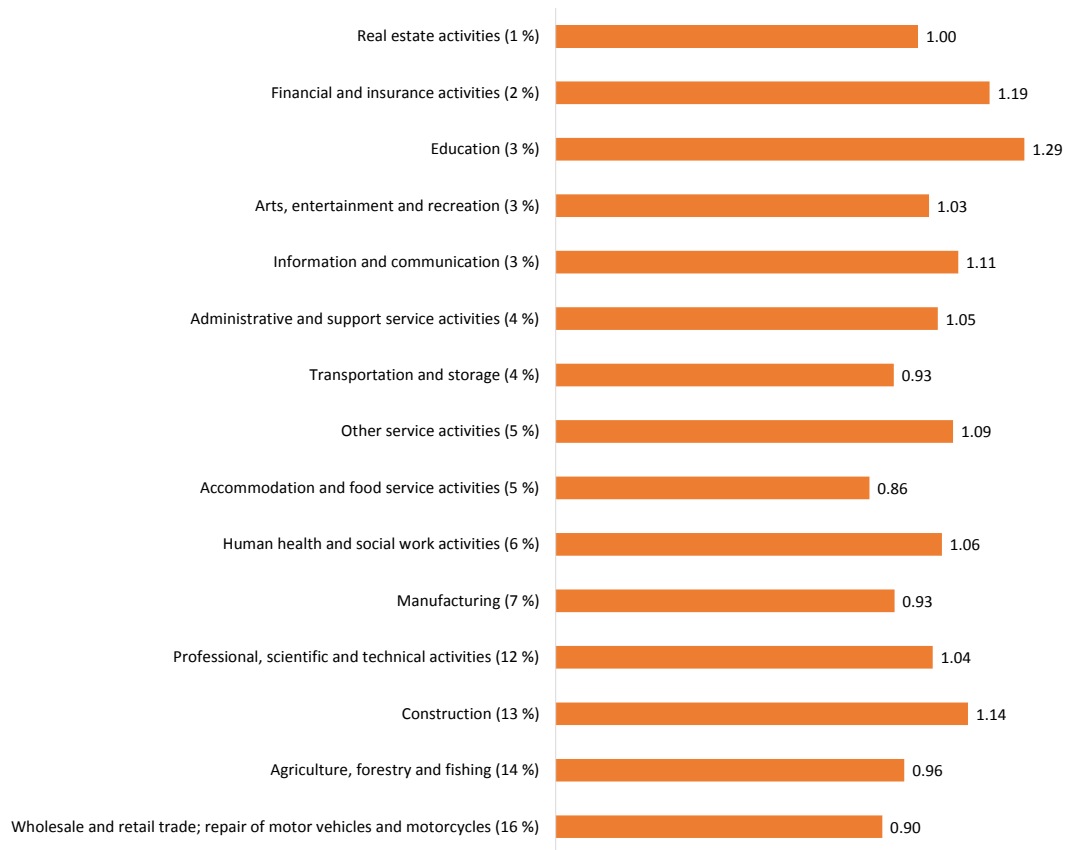
In particular, between 2008 and 2016, the EU-28 self-employment rate⁴²:

- fell in five sectors⁴³ ('accommodation and food services', 'agriculture, forestry and fishing', 'manufacturing', 'transportation and storage', and 'wholesale and retail trade') (Figure 52);

⁴² See Annex I.17 for detailed information at Member State level

- remained unchanged in one sector (‘real estate activities’);
- increased in nine sectors (‘administrative and support service activities’, ‘arts entertainment and recreation’, ‘construction’, ‘financial and insurance activities’, ‘education’, ‘human health and social work activities’, ‘information and communication’, ‘professional, scientific and technical activities’, and ‘other service activities’).⁴⁴

Figure 52: Ratio of self-employment rate in 2016 to self-employment rate in 2008 in different sectors of the EU-28 economy



Source: Eurostat

Note: % refers to the share of the sector in total self-employment in 2016. Only sectors accounting for 0.5% or more of self-employment are included.

⁴³ Only sectors which accounted for 0.5% or more of self-employment are considered..

7.6 Main policy measures supporting self-employment

KEY FINDINGS

- The picture is very mixed among Member States in terms of the range of specific policies and programmes encouraging and supporting self-employment.

As part of the SME Performance Review, information is gathered each year on the implementation of the SBA in Member States. This year the SME Performance Review also includes data on the implementation of policies and programmes in support of self-employment. Such policies may be targeted at the established self-employed, the newly self-employed or individuals who may be considering becoming self-employed.

More specifically, the aim of this review was to find out whether or not EU-28 Member States provide:

1. specific support measures to encourage self-employment;
2. simplified tax procedures for the self-employed;
3. grants for the self-employed;
4. regulatory exemptions/derogations for the self-employed;
5. specific measures to protect the social security, healthcare and pensions of the self-employed;⁴⁵
6. free legal assistance programmes for the self-employed;
7. assistance programmes for unemployed/laid-off workers to become self-employed;
8. public support programmes for strategic coaching and mentoring for the self-employed.

The picture is very mixed among Member States in terms of the range of specific policies and programmes encouraging and supporting self-employment.

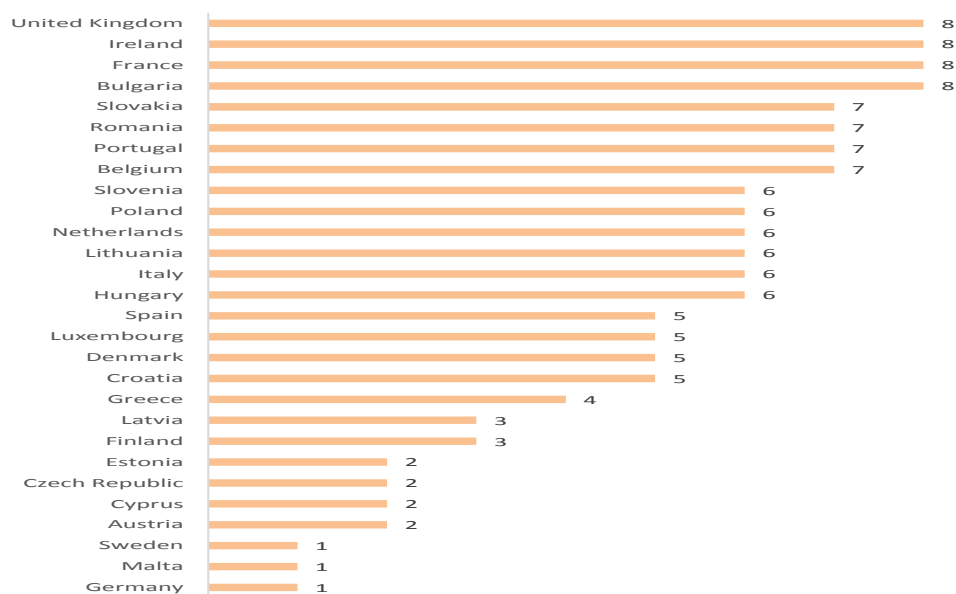
Only four Member States (BG, FR, IR and UK) have policies and programmes in all eight areas of interest, while ten Member States (AT, CY, CZ, DE, EE, EL, FI, LV, MT, SE) cover only four or fewer specific programme and policy areas (Figure 53).

However, this does not necessarily imply that there is little support for self-employment in these Member States, as businesses run by the self-employed can also access a wide range of SME-focused programmes.

Furthermore, the special sales or income tax dispositions for self-employed businesses are in fact typically available to all forms of micro or very small businesses.

⁴⁵ For an overview of such measures, see Eurofound (2017) which gives an overview of social protection and Spasova S., Bouget D., Ghailani, D. and Vanhercke B. (2017). Access to social protection for people working on non-standard contracts and as self-employed in Europe. A study of national policies. European Social Policy Network (ESPN), Brussels: European Commission.
<http://ec.europa.eu/social/BlobServlet?docId=17683&langId=en>.

Figure 53: Number of specific self-employment support programmes and policies provided by EU-28 Member States - 2017



Source: 2016/17 SME Performance Review

Note: information was collected in the first half of 2017 and reflects the situation prevailing at that time.

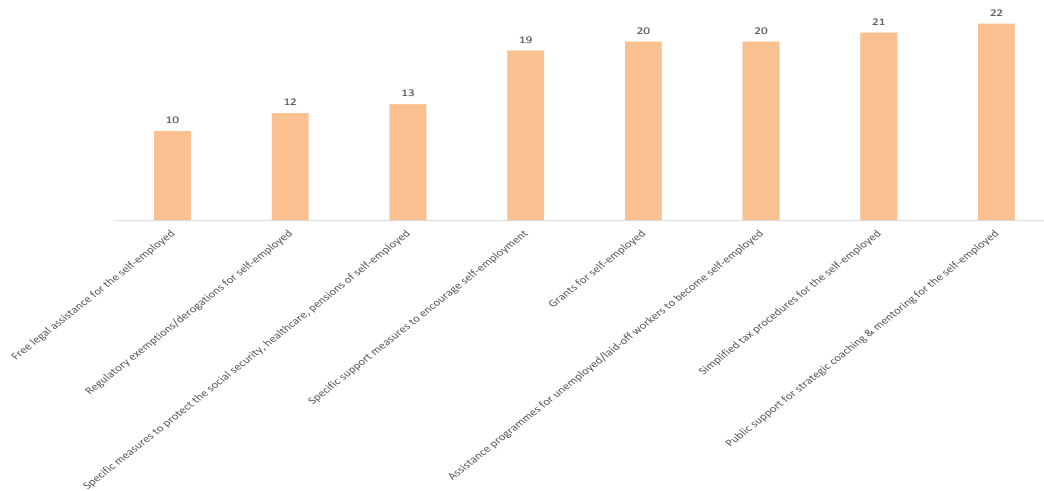
The most commonly available support measures and programmes are (Figure 54):

- public support for strategic coaching and mentoring for the self-employed (22 Member States);
- simplified tax procedures for the self-employed (21 Member States);
- assistance programmes for unemployed/laid-off workers to become self-employed (20 Member States);
- grants for the self-employed (20 Member States);
- specific support measures to encourage self-employment (19 Member States).

In contrast, less than half of Member States provide:

- specific measures to protect the social security, healthcare and pensions of the self-employed (13 Member States);
- regulatory exemptions/derogations for the self-employed (12 Member States);
- free legal assistance for the self-employed (10 Member States).

Figure 54: Number of EU-28 Member States with self-employment support programmes and policies in the eight areas of interest



Source: 2016/17 SME Performance Review

Note: information was collected in the first half of 2017 and reflects the situation prevailing at that time

Although the number of areas in which self-employed businesses can benefit from special support programmes or policies varies greatly among Member States, no simple and direct correlation appears to exist in each⁴⁶ of these eight areas between the presence (or absence) of programmes and policies, and the importance of self-employment in the Member States' labour market.

For example, the range of self-employment rates observed in Member States with simplified tax procedures for the self-employed or specific support measures to encourage self-employment in Member States is broadly the same as in Member States without such measures (Figure 55 and Figure 56). The same conclusion holds for the other areas of interest (see Annex 1.22).

Figure 55: Existence of simplified tax procedures for the self-employed

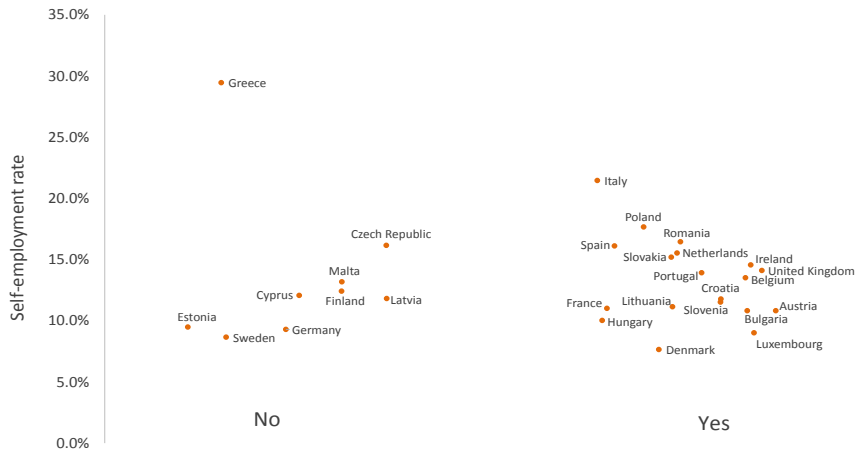


Source: 2016/17 SME Performance Review

Note: information was collected in the first half of 2017 and reflects the situation prevailing at that time.

⁴⁶ The correlation between the presence (or absence) of programmes in a higher (lower) number of policy areas, and the importance of self-employment in the Member States' labour market was also examined with similar results.

Figure 56: Existence of specific support measures to encourage self-employment



Source: 2016/17 SME Performance Review

Note: information was collected in the first half of 2017 and reflects the situation prevailing at that time.

7.7 Why does self-employment vary among EU-28 Member States?

KEY FINDINGS

An econometric analysis of the differences in self-employment rates across EU-28 Member States shows that the set of factors explaining such differences varies greatly.

However, some factors show similar patterns across the majority of Member States:

- Higher average working hours in the economy are associated with higher self-employment rates
- A higher proportion of the population with relatively low education (less than primary / secondary) or a higher proportion of the population with relatively high education (tertiary) is associated with higher self-employment rates
- A younger population – measured by the proportion of the population aged 15-24 and the proportion of the population aged 20-39 – is associated with lower self-employment rates in the EU-28
- A higher proportion of women in the population is associated with lower self-employment rates
- The existence of regulatory exemptions/derogations for the self-employed is associated with higher self-employment rates

In order to identify the factors which may explain the observed differences in the level and trend of self-employment rates across the EU-28 Member States, a number of econometric models were estimated. More than one model and approach were used to ensure the findings are robust. The period covered by the analysis is 2000 to 2016. The companion Working Paper presents in detail the estimation results and the various tests which were undertaken to test the robustness of these results.

The variable which each model seeks to explain is the self-employment rate.

To explain variations in the self-employment rate among the EU-28 Member States, a panel estimation approach was employed. A number of explanatory variables were considered, based on the findings from a literature review. In broad terms, they include:

- macro variables such as GDP, unemployment rates, and interest rates;
- variables capturing the level of social protection, working conditions and income tax rates - including differences between personal and corporate tax rates;

- demographic variables such as age, education, gender, immigration and inequality;
- variables measuring barriers to starting up and operating a business.

Countries in which the gig economy is prevalent were expected to show higher levels of self-employment. However, measuring the gig economy is difficult using the data which are currently collected and published by the national statistical organisations. To overcome this problem, we focus on the presence of platforms (which is only a very imperfect proxy of the gig economy as the latter is much wider than the platform economy) by including, in the analysis, variables reflecting the size of sectors in which platforms are likely to be important. These sectors are ‘accommodation and food service activities’, ‘arts, entertainment and recreation’ and ‘transportation and storage’. The size of the ‘agriculture, forestry and fishing’ sector was also included, due to its high level of self-employment.

Table 10 below provides a comprehensive list of all the factors which were considered in the econometric analysis to be potential drivers of the differences in self-employment rates among EU-28 Member States. The table also shows the expected sign (positive or negative) of the impact of the variable on the self-employment rate.

Table 10: List of potential drivers of self-employment considered in the econometric analysis

Variable	Expected impact of variable on self-employment rate (based on literature review)	Data source
Macro economy		
GDP per capita current prices (1000 Purchasing Power Standards)	?	AMECO
Unemployment rate	+	Eurostat
Long-term unemployment percentage of active population	+	Eurostat
Real short-term interest rate	?	AMECO
Real long-term interest rate	?	AMECO
Social protection⁴⁷		
Social Protection Benefits Expenditure Constant 2010 EUR	-	Eurostat
Total social expenditure on unemployment in % of GDP	-	OECD
LMP Expenditure: Out-of-work income maintenance and support	-	Eurostat
LMP Expenditure: Start-up incentives	+	Eurostat
Working conditions		
Average weekly working hours of full-time employees	+	Eurostat
Employee compensation per head of working age population	-	AMECO
All-in average personal tax rates (income tax + employee social security contributions + employer social security contributions; single person – no child)	+	OECD
Difference between implicit income and corporate tax rates	+	European Commission
Age		
Percentage of population aged 15 to 24	+	Eurostat
Percentage of population aged 20 to 39	?	Eurostat
Education		
Percentage of working age population with low education level (less than primary / secondary)	+	Eurostat
Percentage of working age population with high (tertiary) education level	+	Eurostat
Immigration		

⁴⁷ These variables refer to the overall expenditure on social protection benefits and the overall expenditure on unemployment (i.e. they are not specific to either the self-employed or the employed). The hypotheses is that higher social protection benefits reduce the level of necessity self employment. LMP variables refer to public expenditure on labour market policy interventions aimed at groups of persons with difficulties in the labour market.

Total immigration (from within and outside the EU-28) as a share of population	?	Eurostat
Inequality		
Inequality of income distribution (Eurostat Income quintile share ratio 65 years and under)	+	Eurostat
Gender		
Number of women per 100 men	-	Eurostat
Gross value added (GVA) of sectors		
GVA share of the 'Agriculture, forestry and fishing' sector	+	Eurostat
GVA share of the 'Transport services' sector	+	Eurostat
GVA share of the 'Accommodation and food service activities' sector	+	Eurostat
GVA share of the 'Arts, entertainment and recreation' sector	+	Eurostat
Ease of doing business⁴⁸		
Cost of starting a small- to medium-sized limited liability company (% of income per capita)	-	World Bank
Time required to start a small- to medium-sized limited liability company (days)	-	World Bank
Paid-in minimum capital required to start a small- to medium-sized limited liability company (% of income per capita)	-	World Bank
Barriers to entrepreneurship		
Complexity of regulatory procedures: includes the complexity of the licenses and permits system and the communication and simplification of rules and procedures	-	OECD
Administrative burdens to start corporations and sole proprietor firms	-	OECD
Regulatory protection of incumbents	-	OECD
Other Product Market Regulation (PMR) indicators		
Public ownership and state involvement in business operations	-	OECD
Barriers to trade and investment	-	OECD

Source: London Economics

A large number of panel data models were estimated (see companion Working Paper) for the EU-28 Member States as a group, and for groups of Member States clustered by the level of per-capita GDP. Time series models of the self-employment rate were also estimated separately for individual Member States.

The most important finding of this empirical analysis is that the set of factors explaining differences in the self-employment rate across EU-28 Member States varies greatly.

However, some factors show similar patterns across the majority of Member States:

- Higher average working hours are associated with higher self-employment rates in the EU-28 as a whole, in all four Member State groupings, and in 20 out of 28 individual Member States.
- A higher proportion of the population with relatively low education (less than primary / secondary) or a higher proportion of the population with relatively high education (tertiary) is associated with higher self-employment rates in the EU-28 overall, and in three out of four Member State groups. These two variables were excluded from the country-specific analysis as data was not available for the whole sample period.
- A younger population – measured by the proportion of the population aged 15-24 and the proportion of the population aged 20-39 – is associated with lower self-employment rates in the EU-28 as a whole, and also in three out of the four

⁴⁸ In each case, the variable was available for both men and women. For the purpose of this analysis, the average across both genders was taken.

Member State groupings, along with 18 and 19 individual Member States respectively out of 28. While the model does not allow one to draw conclusions of why such a result is observed, a number of factors may be at play. One explanation could be necessity driven self-employment – older people losing their job are forced into self-employment due to lower employment potential (perceived higher costs and lower productivity). Another explanation could be related to the occupations – it was shown above that many self-employed are professionals. For being successful as professional, one needs to have gathered some experience and expertise as well as networks before, i.e. must be older. A third explanation might be a cultural one – clients wouldn't trust a young self-employed, while they would an older one. A fourth explanation could be related to access to finance. Younger persons do not have much savings and cannot afford to set-up a business, while older persons might have more capital to go to self-employment (for the business, but also as a safety net/"private cushion").

- A higher proportion of women in the population is associated with lower self-employment rates in the case of the EU-28 overall, in 2 out of 4 Member State groupings, and 16 out of 28 EU Member States.

In addition, the country-specific analysis shows that:

- higher average employee compensation is linked with lower self-employment rates in 18 of the 26 Member States for which the complete data was available ;
- higher average personal tax rates are linked to higher self-employment in 15 of the 20 Member States for which complete data was available.⁴⁹

However, no single specific factor shows a consistent relationship with the self-employment rate in all EU-28 Member States or in Member State groupings. In particular:

- no consistent pattern could be found between the self-employment rate and GDP per capita, unemployment, the long-term unemployment rate, and the size of the agricultural sector;
- the platform economy variables do not consistently show that a larger platform economy is associated with higher self-employment rates. However, this result does not necessarily mean that the platform economy does not lead to higher self-employment rates. Rather, the empirical finding may reflect the difficulties in measuring the platform economy, as well as the fact that some self-employment associated with the platform economy may not show up in the official self-employment statistics (e.g. undeclared work).

Regarding the relationship between specific policies aimed at encouraging self-employment (discussed in section 7.6), only the existence of regulatory exemptions/derogations for the self-employed is found to have a consistent positive and statistically significant relationship with the self-employment rate.⁵⁰

⁴⁹ Differences between implicit personal and corporate tax rates also showed signs of a positive relationship with the self-employment rate.

⁵⁰ A model using the total number of measures was also estimated. But, as this variable is statistically insignificant in the estimated model, the detailed estimation results are only reported in the companion Working Paper.

7.8 Analysis of employment creation by self-employed and other SME enterprises

KEY FINDINGS

- Data on individual firms in Belgium, Cyprus, Czech Republic, Estonia, Finland, France, Greece, Hungary, Ireland, Lithuania, Luxembourg, Malta, Poland and the United Kingdom show that new businesses created in recent years by self-employed persons account for 28 % to 100 % of all newly created firms in these Member States. It is important to note that these data may not be strictly comparable, as the manner in which information on self-employed firms is collected and reported varies across Member States.
- Overall, these data also show that the share of total employment generated by firms created by self-employed persons in total employment generated by all new firms declines marginally over time.
- The implication is that firms other than those created by self-employed persons tend to post a slightly better employment performance over time.

So far the report has presented information on the evolution of the number of SMEs with 0 or few employees, as well as the evolution of self-employment. This sub-section aims to take the analysis one step further, by examining how firms created by the self-employed after the 2008/09 crisis have survived, and how much employment they created over time, if any, in comparison to other firms created at the same time.

As previously clarified, any firm (irrespective of its legal form) which is created by a self-employed person will employ at least one person (i.e. the self-employed person), even if the firm has no employees (i.e. no salaried workers).

The analysis which follows uses firm level data in order to track the survival of firms created by self-employed persons, and the employment creation performance of such firms.⁵¹ It covers the following countries: Belgium, Cyprus, Czech Republic, Estonia, Finland, France, Greece, Hungary, Ireland, Lithuania, Luxembourg, Malta, Poland and the United Kingdom.

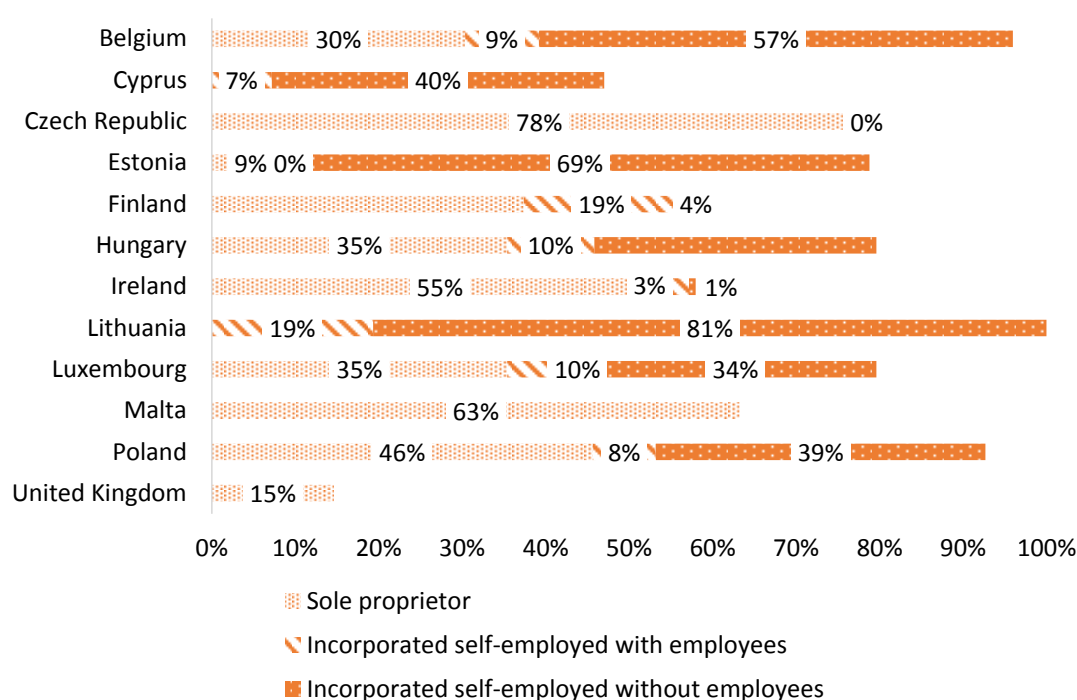
In order to analyse self-employment consistently across Member States, firms were considered as self-employment if the firm contained at least one non-salaried employee.

Self-employed entities whose legal status allows them to hire employees and whose legal status is tied to a natural person are also considered where data is available. Henceforth, these entities will be referred to as 'sole proprietors'.

Firms created in recent years (see Table 11 for precise period for each Member State) by self-employed persons account for 15 % to 100 % of all newly created firms in the Member States included in the analysis. It is important to note that these data may not be strictly comparable, as the manner in which information on self-employed firms is collected and reported varies across Member States.

⁵¹ For some countries, the analysis, using micro data, was undertaken by the project team. In the remaining countries the relevant national statistical organisation undertook the data compilation for the project team and provided aggregate data for the analysis, based on the research specifications of the project team.

Figure 57: Share of self-employed firms in the total number of newly created firms (in %) by type of self-employment in selected Member States



Source: Statistics Belgium, Cystat, Czech Statistical Office, Statistics Estonia, Statistics Finland, Hungarian Central Statistical Office, Statistics Lithuania, Statistics Luxembourg, UK Office of National Statistics, Central Statistics office of Poland, and the Central Statistics Office of Ireland.

Note: Data for Belgium, Cyprus, Czech Republic, Finland, Hungary, Ireland, Lithuania, Luxembourg, and Poland based on 2012-2014 and Estonia and the UK based on 2013-2015. A small number of incorporated self-employed firms were identified for the United Kingdom but are not included in the share because the number is negligible. Data is not presented for France, Greece and Malta as data for incorporated self-employment was not available.

The analysis of the firm level data quantifies the average combined employment of all firms in the year in which they were created by self-employed persons, and average total employment 1, 2, 3, 4 and 5 years after the firms' creation. As the cohorts of new firms are of different vintages and so have information available for a different numbers of years, the table also shows for each year, the total employment at birth of the cohorts presented.

For example, in the case of Belgium, the cohorts covered in the analysis were born over the period 2008 to 2013, and the total employment of incorporated self-employed firms with employees was, on average, 11,914 in the birth year. The average employment of the cohorts of firms, for which five years of data is available when they are 5 years old, is 6,510. The cohorts for which five years of data is available employed, on average, 12,615 individuals in the year in which they were born.

Consequently, the employment by the cohorts of such firms is 52 % lower in year 5 than at birth. The decrease in employment reflects both attrition (i.e the deaths of such firms) and also possible decreases in employment.

Overall, the employment patterns of self-employed firms for which employment data by cohort are available mirror the firm survival patterns discussed elsewhere in the report.

A similar decrease in total employment over time is observed across all Member States and for self-employed firms, both with and without employees.

Table 11: Average aggregate employment in newly created self-employed firms up to five years after firm creation, recent cohorts for which data are available – selected EU-28 Member States

Country	Type of self-employment	Period	Number of firms in start Year	Employment over time					
				(Brackets denote the average employment in Year 0 for the sample on which average employment is based)					
				Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Belgium	Incorporated self-employed with employees	2008-2013	5,617	11,914	10208, (11914)	8716, (12201)	7650, (12473)	6920, (12510)	6510, (12615)
	Incorporated self-employed without employees	2008-2013	35,420	39,873	36100, (39873)	32600, (41143)	29522, (41230)	25127, (39877)	21628, (38441)
	Sole proprietor	2008-2013	16,734	18,630	17011, (18630)	14125, (18593)	11969, (18410)	10165, (18324)	9056, (18444)
Cyprus	Incorporated self-employed with employees	2008-2013	209	257	334, (257)	257, (239)	192, (223)	149, (220)	113, (220)
	Incorporated self-employed without employees	2008-2013	919	537	823, (537)	628, (466)	535, (447)	444, (407)	365, (394)
Czech Republic	Sole proprietor	2009-2013	82,540	85,927	69635, (85927)	48375, (91331)	54047, (97122)	48977, (100277)	42709, (98888)
Estonia	Incorporated self-employed with employees	2007-2015	130	501	379, (501)	378, (501)	420, (602)	440, (602)	465, (602)
	Incorporated self-employed without employees	2007-2015	8,177	8,235	5415, (8235)	6410, (8084)	6713, (7959)	6716, (7447)	6651, (7072)
	Sole proprietor	2007-2015	2,755	2,869	2146, (2869)	1841, (3058)	1766, (3287)	1789, (3633)	1897, (4097)
Finland	Incorporated self-employed with employees	2001-2014	4,524	8,155	10054, (8155)	10950, (8303)	10859, (7719)	10542, (7524)	10172, (7322)
	Incorporated self-employed without employees	2001-2014	1,705	703	925, (703)	1137, (735)	1344, (763)	1398, (756)	1399, (744)
	Sole proprietor	2001-2014	9,774	6,533	6997, (6533)	7022, (6995)	6654, (6924)	6288, (7029)	6022, (7080)
France	Sole proprietor	2008-2013	12,157	15,295	14922, (15295)	13343, (15114)	12772, (16316)	12211, (17484)	11077, (18973)
Greece	Sole proprietor	2008-2009	131,374	197,754	166943, (197754)	165182, (219806)	0, (0)	0, (0)	0, (0)
Hungary	Incorporated self-employed with employees	2008-2013	5,552	12,744	7390, (8610)	3227, (5387)	2971, (5559)	2709, (5369)	2571, (5079)
	Incorporated self-employed without employees	2008-2013	37,508	37,825	32508, (38524)	30120, (39079)	28238, (40695)	26216, (41037)	24586, (39952)
	Sole proprietor	2008-2013	32,413	38,715	27044, (34887)	18723, (31955)	16017, (33188)	14105, (33568)	12704, (32653)

Ireland	Incorporated self-employed with employees	2008-2013	965	3,774	3806, (3774)	3396, (3917)	2957, (4024)	2769, (4190)	2540, (4589)
	Incorporated self-employed without employees	2008-2013	291	594	588, (594)	533, (610)	472, (602)	407, (587)	380, (628)
	Sole proprietor	2008-2013	19,185	23,707	22332, (23707)	21180, (24778)	19423, (24981)	17850, (25287)	15983, (26046)
Lithuania	Incorporated self-employed with employees	2001-2013	481	1,837	1822, (1837)	1711, (1982)	1648, (2149)	1566, (2317)	1514, (2536)
	Incorporated self-employed without employees	2001-2013	689	689	747, (689)	759, (717)	752, (745)	757, (792)	783, (851)
Luxembourg	Incorporated self-employed with employees	2006-2013	259	729	718, (729)	666, (737)	617, (729)	607, (745)	610, (736)
	Incorporated self-employed without employees	2006-2013	563	563	509, (563)	429, (536)	384, (530)	336, (500)	319, (484)
Malta	Sole proprietor	2009-2013	1,823	1,753	951, (1070)	744, (1070)	703, (1070)	671, (1070)	0, (1070)
Poland	Incorporated self-employed with employees	2008-2013	42,549	53,685	37548, (53685)	28383, (54232)	22449, (56844)	22393, (62224)	22154, (67217)
	Incorporated self-employed without employees	2008-2013	202,489	220,721	180294, (220721)	139560, (219846)	107819, (223395)	95044, (224984)	81904, (215556)
	Sole proprietor	2008-2013	234,760	229,340	199344, (229340)	156191, (231146)	121867, (237888)	109242, (244465)	96261, (238432)
United Kingdom	Sole proprietor	2007-2015	29,626	69,068	71233, (69068)	72468, (68364)	62510, (65462)	55018, (66290)	51385, (67830)

Source: Statistics Belgium, Cystat, Czech Statistical Office, Statistics Estonia, Statistics Finland, Hungarian Central Statistical Office, Statistics Lithuania, Statistics Luxembourg, UK Office of National Statistic, Central Statistics office of Poland, Central Statistics Office of Ireland, Insee France, DGFIP, Malta Statistics Authority, and the Hellenic Statistics Authority.

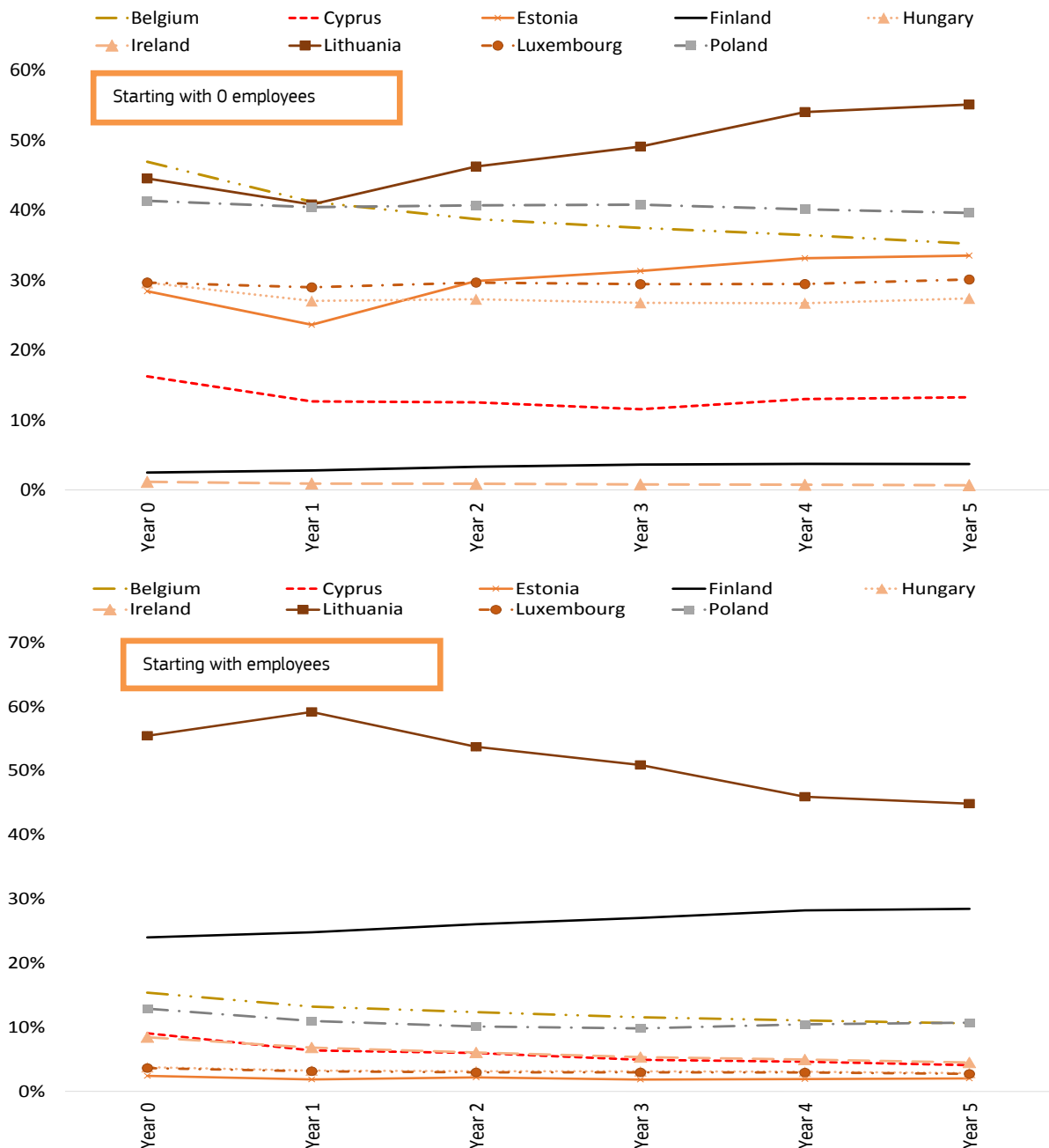
Note: Luxembourg and France are assumed to have one self-employed individual per self-employed firm, as only data for number of employees was made available. The sample of firms is changing over time as different cohorts are available for different periods of time. Data for incorporated self-employment was not available for France, Greece and Malta.

Overall, there is a marginal decline over time in the share of total employment generated by firms created by self-employed persons in total employment generated by all new firms (with the exception of Lithuanian and Estonian firms starting out with 0 employees and Finnish firms starting out with employees) (Figure 58).

There is also a marginal decline over time in the share of total employment accounted for by firms created by sole proprietors in the total of employment creation by all new firms (Figure 59).

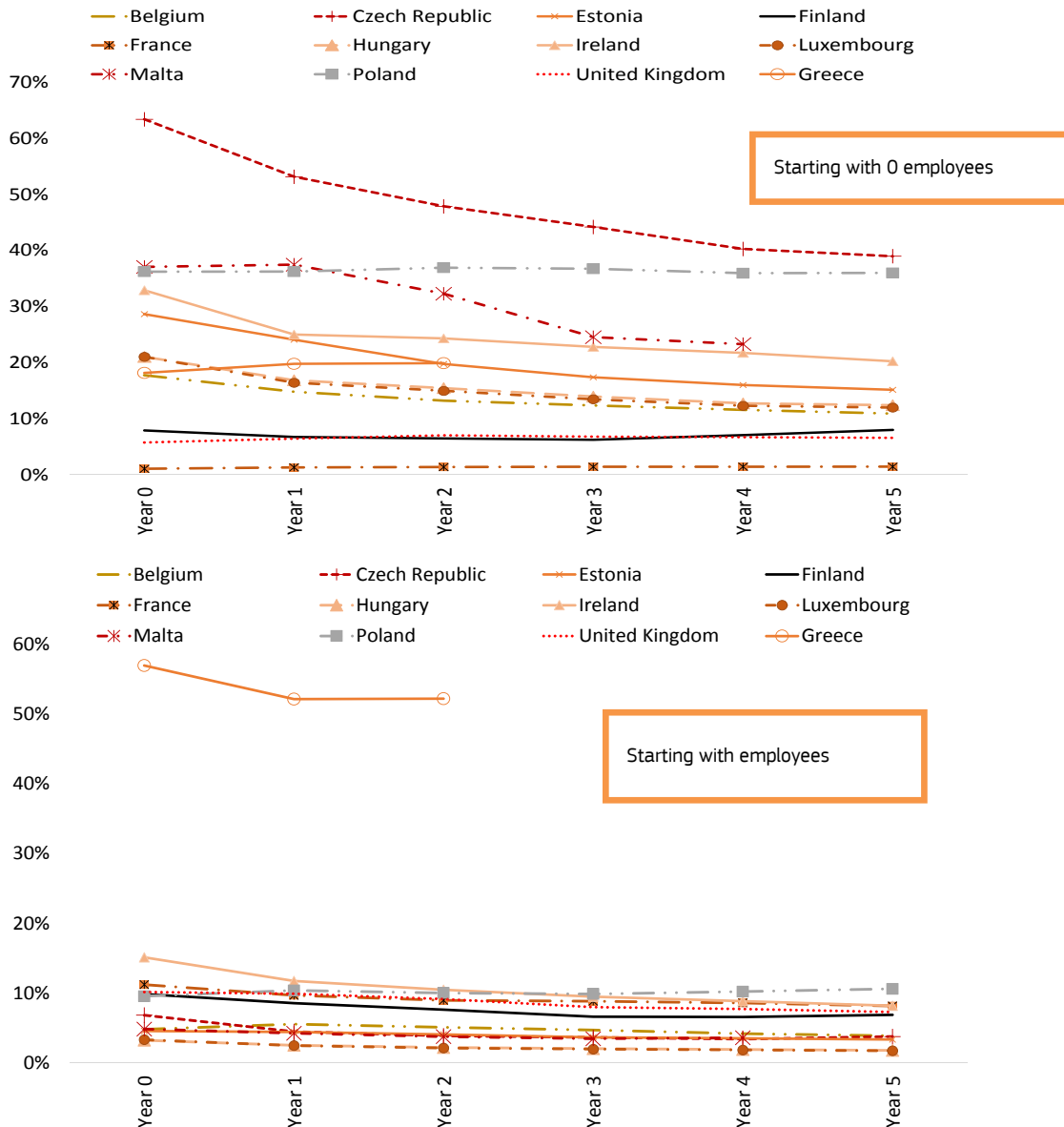
The implication is that firms other than those created by self-employed persons tend to post a slightly better employment performance.

Figure 58: Average employment share of self-employed firms in the total of all firms created up to five years after firm creation



Source: Statistics Belgium, Cystat, Statistics Estonia, Statistics Finland, Hungarian Central Statistical Office, Central Statistics Office Ireland, Statistics Lithuania, Statistics Luxembourg and Central Statistics Office Poland. Note: Luxembourg is assumed to have one self-employed individual per self-employed firm, as only data for number of employees was made available. Data refers to cohorts 2008 and 2009 in order to have a minimum of five years of data recorded after firm creation. The Czech Republic, France, Greece, Malta and the UK are not included as no self-employment could be identified in incorporated firms.

Figure 59: Average employment share of sole proprietors in the total of all firms created up to five years after firm creation



Source: Statistics Belgium, Czech Statistical Office, Statistics Estonia, Statistics Finland, Hungarian Central Statistical Office, UK Office of National Statistic, Central Statistics office of Poland, Central Statistics Office of Ireland, Insee France, DGFIP, Malta Statistics Authority, and the Hellenic Statistics Authority.

Note: Data refers to cohorts 2008 and 2009 in order to have a minimum of five years of data recorded after firm creation. Cyprus, Lithuania and Luxembourg are not included as no special status exists for sole-proprietors. France is assumed to have one self-employed individual per self-employed firm, as only data for number of employees was made available.

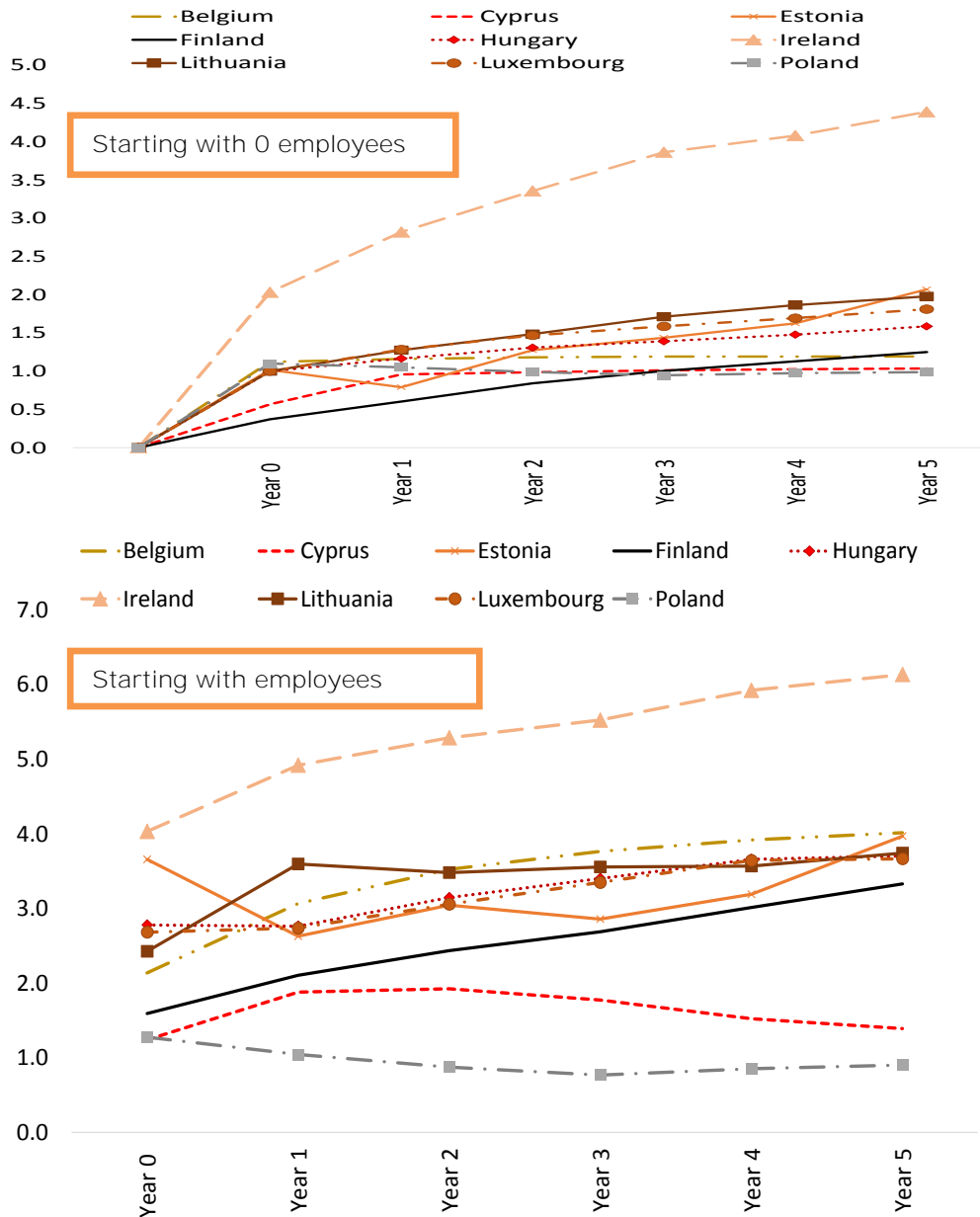
As already noted, firms newly created by self-employed persons have a high mortality rate, but the mortality rate does not appear to accelerate over time. Moreover, the survival rate also does not appear to differ substantially between self-employed persons and sole proprietors (see Annex I.19).

In general, firms created by self-employed persons (other than sole proprietors) with 0 employees and also with employees do take on some employees over the first five years.

However, sole proprietors with 0 employees do not in general take on employees over the first five years (with the exception of the UK where sole proprietors typically increase employment to 2.5 within 5 years).

Similarly, sole proprietors starting with employees tend, on average, to maintain a stable number of employees. The United Kingdom, Estonia and Malta are exceptions, showing some increase in employment.

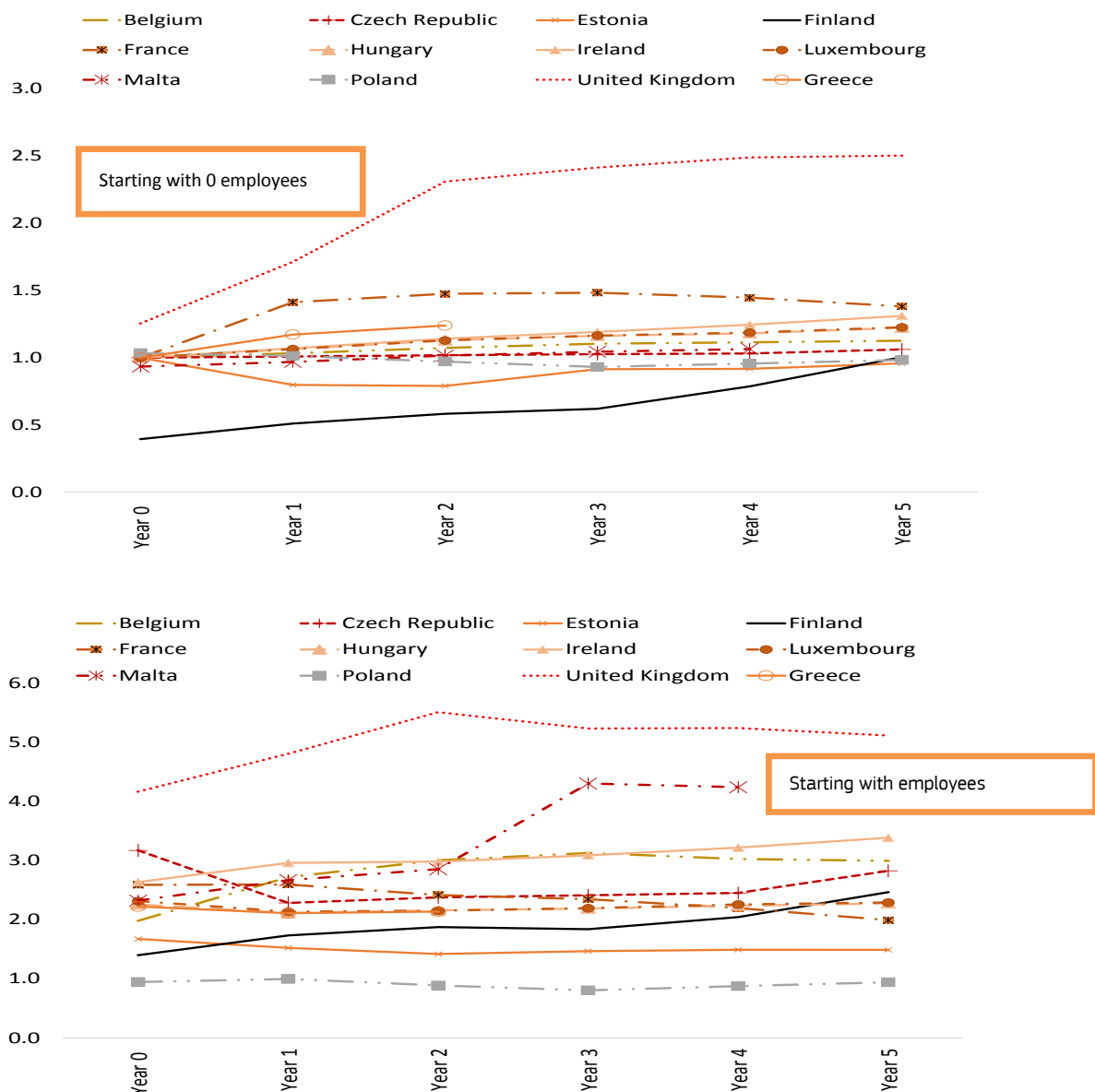
Figure 60: Average employment per enterprise for self-employed firms up to five years after firm creation



Source: Statistics Belgium, Cystat, Statistics Estonia, Statistics Finland, Hungarian Central Statistical Office, Central Statistics Office Ireland, Statistics Lithuania, Statistics Luxembourg and Central Statistics Office Poland

Note: Luxembourg is assumed to have one self-employed individual per self-employed firm, as only data for number of employees was made available. Data refers to cohorts 2008 and 2009 in order to have a minimum of five years of data recorded after firm creation. Finland is not currently included as there is an outstanding question on the appropriate definition of the death rate used to estimated survival. Finland will be included in the final report. The Czech Republic and the UK are not included as no self-employment was identified in incorporated firms.

Figure 61: Average employment per enterprise for sole-proprietors up to five years after firm creation



Source: Statistics Belgium, Czech Statistical Office, Statistics Estonia, Statistics Finland, Hungarian Central Statistical Office, UK Office of National Statistic, Central Statistics office of Poland, Central Statistics Office of Ireland, Insee France, DGFiP, Malta Statistics Authority, and the Hellenic Statistics Authority.

Note: Data refers to cohorts 2008 and 2009 in order to have a minimum of five years of data recorded after firm creation. Finland is not currently included as there is an outstanding question on the appropriate definition of the death rate used to estimate survival. Finland will be included in the final report. Cyprus, Lithuania and Luxembourg are not included as no special status exists for sole-proprietors. France is assumed to have one self-employed individual per self-employed firm, as only data for number of employees was made available.

Detailed information on the change in employment of different cohorts of surviving SMEs created by self-employed persons is provided in Annexes I.20 and I.21. The key facts to note are as follows:

- The pattern of job creation is very mixed, with differences between cohorts and businesses of different legal forms created by the self-employed.
- Employment creation generally increased with the number of years in business.
- The vast majority of self-employed firms do not increase employment substantially in the five years following creation, with less than 20% of firms expanding by over five additional employees in the majority of available Member States.
- The Member States with the largest share of firms showing positive change (Estonia and Finland), generally had a lower share of job creation in these firms compared to firms showing positive change in other Member States.



Photo: Jirsak / Shutterstock.com

Part 3: Start-ups and scale-ups

8. Start-ups and scale-ups and SME employment performance

Start-ups and scale-ups are important drivers of economic growth. As announced in the Single Market Strategy, European Commission launched its corresponding initiative on these highly important businesses through the communication 'Europe's next leaders: the Start-up and Scale-up Initiative', which clarifies that *"High-growth firms create many more new jobs compared to other firms. Start-ups scaling up into bigger firms form a large share of these businesses. They increase EU innovation and competitiveness, strengthening the economy. Such 'scale-ups' can also provide social benefits, including offering more flexible and modern working arrangements."*⁵²

There exists no single definition of start-ups and scale-ups, however:

- Start-ups are generally understood to be new enterprises which have the ambition to grow rapidly. Typically such start-ups are found in the ICT, online retail and Fintech⁵³ sectors, but they can also be found in any other sector. Unfortunately, no comprehensive database of start-ups exists. Financial databases can provide information on the number of start-ups which have raised external finance, but not on the number of newly-created firms which, from day one, have had the ambition to grow rapidly.⁵⁴ The reason is that many such firms will fail before they can reach the first stage of external start-up funding. In its early days, a start-up will typically depend mainly on self-funding, and then on funding from family, friends, etc.

The present chapter uses mainly the Eurostat business demography data of the Structural Business Statistics to shed some indirect light on the scale of start-ups among newly created enterprises. It should be noted that the business demography data published by Eurostat refer to the business economy as whole and not only to the non-financial business sector.

- Scale-ups are generally understood to be firms undergoing rapid (i.e. above average) growth. Again, there exists no database which provides comprehensive information on the extent of scale-ups within the general SME population. However, the Structural Business Statistics for the total business economy provides information on both rapidly-growing enterprises and rapidly-growing young enterprises. This statistical information has been utilised in the present chapter to further illuminate the extent of scale-ups in the overall SME business demography.

⁵² See European Commission (2016), COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS - Europe's next leaders: the Start-up and Scale-up Initiative, Strasbourg, 22 November.

⁵³ 'Fintech' refers to the population of larger technology and financial sector firms and technology and IT start-ups which aim to use technology to develop new financial services, products and processes in order to compete with established financial institutions and intermediaries.

⁵⁴ National statistical organisations do not typically collect information on the growth aspirations of businesses.

8.1 Business births

KEY FINDINGS

- The number of newly created enterprises (as a proportion of the total number of enterprises) averaged 10% in the EU-28 from 2010 and 2014.
- Most of the newly-created firms in the EU-28 start very small – 70% start with no employees and 27% with 1 to 4 employees. Such firms are also characterised by high mortality rates.
- In the EU-28 most of the newly-created firms over the period 2012-2014, the last three years for which data are available, were born in non-ICT industries. The ICT sector (ICT manufacturing, ICT services, ICT wholesale and online retail trade) accounted for only 7.9% of all EU-28 enterprise births during this period.

In the EU-28, the birth rate of enterprises in the business economy varies across Member States. Although the EU-28 average was approximately 10 % in the period 2010 to 2014, it was only about half of that in Belgium, whereas in Lithuania it was 1.5 times higher (Figure 62).

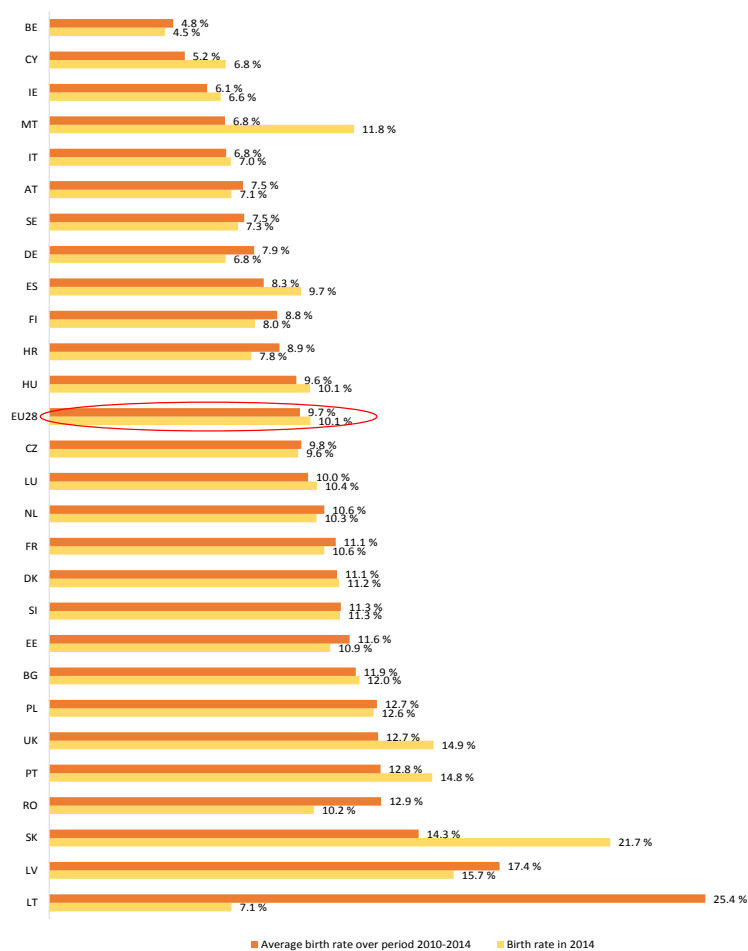
Box 5

Definition of enterprise births

Enterprise birth rate in year t = number of newly created enterprises in year t divided by number of active enterprises in year t-1

In 2014, the enterprise birth rate of 22 Member States was within a range of +/- 3.5 percentage points of the EU-28 figure of 10.1 %.

Figure 62: Enterprise birth rate – average over the period 2010-2014 and 2014

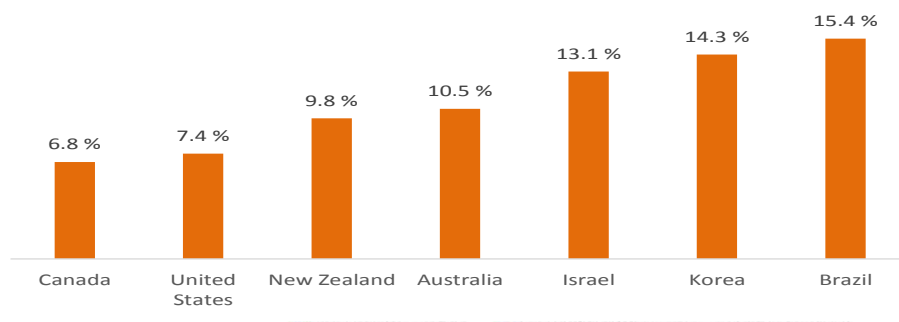


Source: Eurostat, National Statistical Offices, and DIW Econ

Notes: Business economy excludes activities of holding companies. No data available for Greece. Ireland: average over 2010 to 2012 and 2012 is used instead of 2014 due to missing data. Malta: average over 2011 to 2014. Croatia: average over 2013 to 2014.

In comparison, the average employer enterprise birth rate⁵⁵ over the period 2010 to 2013 for selected non-EU countries ranged from 6.8% in Canada and 7.4% in the United States to 15.4% in Brazil.

Figure 63: Employer enterprise birth rate, total business economy – average over the period 2010-2013



Source: OECD (2016)

Note: Number of employer births as percentage of total employer enterprises.

⁵⁵ The employer enterprise birth rate excludes births of non-employer firms. Therefore, the numbers are not directly comparable, but should be seen as illustrative.

Not surprisingly, almost all the newly created enterprises are very small in terms of employment. This is a typical characteristic of new enterprises.

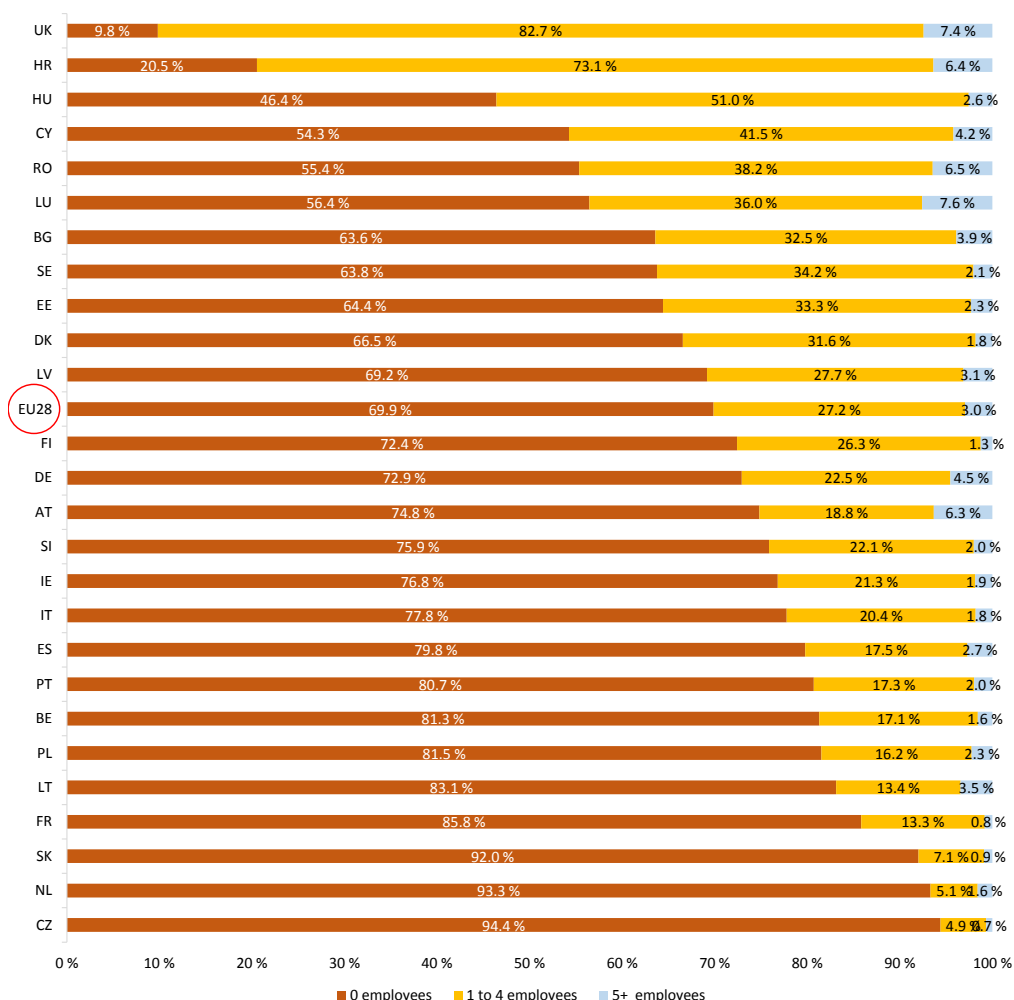
In fact, most of the enterprises created in 2014 were firms with 0 employees.

- Across the EU-28, 70 % of all newly created firms had 0 employees in 2014.
- Moreover, in 2014, the share of newly created firms with 0 employees in the total number of newly created firms exceeded 80 % in 8 Member States (Belgium, Czech Republic, France, Lithuania, Netherlands, Poland, Portugal and Slovakia).
- Newly created firms with 0 employees accounted for less than 50 % of total enterprise births in only three Member States (Croatia, Hungary and UK).

Firms with employees accounted for 30 % of all newly created firms in the EU-28 in 2014, with most of these firms having 1 to 4 employees. The creation of such firms reflects a variety of developments: some of these firms may have been truly new firms starting with only 1 or a few employees, others may have been spin-offs of existing firms, or the result of de-mergers, etc.

In 2014, 70 % of newly-created firms in the EU-28 were enterprises with 0 employees. This figure exceeds 80 % in 8 Member States (BE, CZ, FR, LT, NL, PL, PT, SK).

Figure 64: Share of total enterprise births by enterprise size class – 2014



Source: Eurostat

Notes: Malta and Greece excluded due to missing data.

While enterprises with 0 employees accounted for most enterprise births, these enterprises are also characterised by high mortality. As a result, the net annual increase in the population of such enterprises is typically much lower than a focus on the birth

rate alone would suggest. In fact, the population of enterprises with 0 employees declined from 2009 to 2014 in 8 Member States (Cyprus, Denmark, Germany, Hungary, Italy, Portugal, Spain and the United Kingdom) of the 25 Member States for which the relevant information is available⁵⁶, grew by 6 % or less in a 2 Member States (Austria and Estonia) and remained unchanged in Bulgaria (Table 12). Only 2 Member States (Cyprus and Spain) show a decrease in the population of active enterprises in all enterprise size classes.

Table 12: Change in population of active enterprises (in %) from 2009 to 2014

Member State	Total population of active enterprises	Active enterprises with 0 employees	Active enterprises with 1 to 4 employees	Active enterprises with 5 to 9 employees	Active enterprises with 10+ employees
LU	46 %	24 %	15 %	-5 %	9 %
SE	40 %	10 %	18 %	3 %	6 %
NL	27 %	15 %	3 %	-19 %	1 %
UK	21 %	-21 %	10 %	7 %	11 %
IT	20 %	-4 %	-1 %	13 %	-10 %
LV	17 %	111 %	-1 %	-1 %	-8 %
SK	15 %	39 %	-12 %	-6 %	-10 %
BE	12 %	20 %	-2 %	-2 %	0 %
SI	12 %	30 %	5 %	-15 %	-10 %
EE	11 %	6 %	24 %	0 %	-7 %
CZ	9 %	15 %	-3 %	16 %	-18 %
PL	6 %	10 %	1 %	-21 %	7 %
PT	6 %	-18 %	-3 %	0 %	-19 %
FI	6 %	10 %	-5 %	-26 %	7 %
HU	5 %	-21 %	6 %	9 %	1 %
FR	4 %	28 %	23 %	-8 %	-15 %
DK	4 %	-21 %	41 %	33 %	24 %
AT	2 %	5 %	-5 %	3 %	10 %
BG	2 %	0 %	9 %	-20 %	-13 %
LT	-4 %	80 %	20 %	-8 %	4 %
DE	-4 %	-15 %	-7 %	11 %	38 %
IE	-7 %	42 %	1 %	-7 %	-3 %
ES	-8 %	-6 %	-7 %	-20 %	-24 %
RO	-14 %	255 %	-15 %	-7 %	0 %
CY	-14 %	-7 %	-19 %	-18 %	-15 %

Source: Eurostat

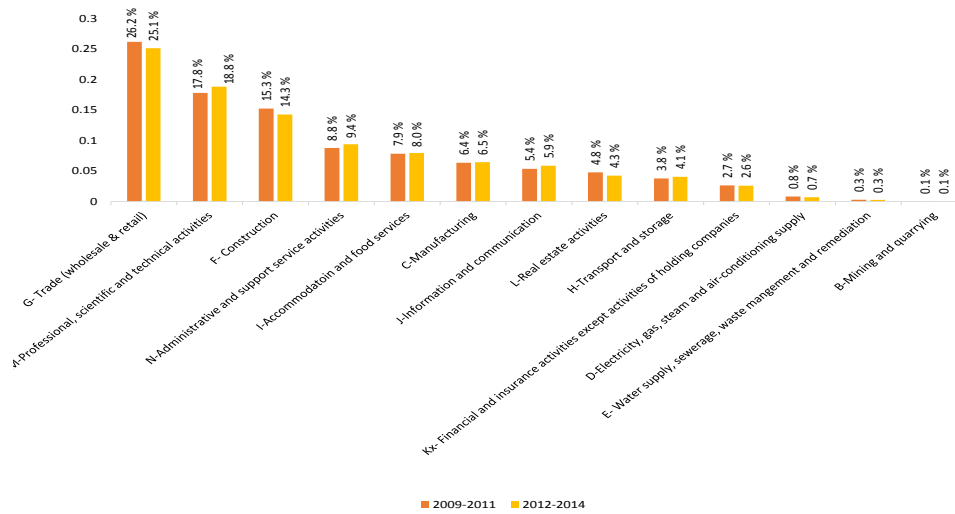
Notes: Croatia, Greece and Malta excluded due to missing data. The analysis uses 2009 as the start year in order capture developments from the trough of the financial crisis of 2008/2009.

In 2014, most of the new enterprises were born in 'wholesale and retail trade', 'professional, scientific and technical activities' and 'construction'. These three sectors accounted for 25 %, 19 % and 14 % respectively of all enterprise births (58 % in total) over the period 2012 -2014 (Figure 65).

⁵⁶ This decline in the number of enterprises with 0 employees may reflect the mortality of such firms, or the addition of employees by such firms, or a combination of both factors. The business mortality data presented later in the chapter suggest that the decline in the number enterprises with 0 employees reflects mainly the mortality of such businesses.

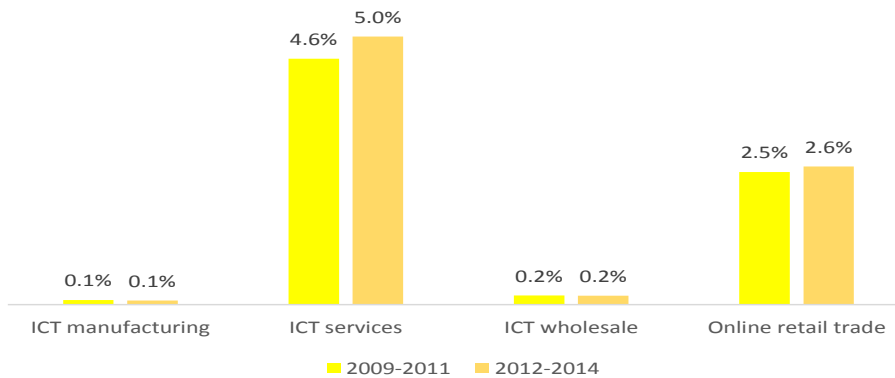
In contrast, the sectors which might typically be considered as the natural home of start-ups, such as 'ICT services' and 'online retailing', accounted for only 5.0 % and 2.6 % respectively of enterprise births over the same period (Figure 66).

Figure 65: Share (in %) of different sectors of EU-28 business economy in total enterprise births in 2009-2011 and 2012-2014



Source: Eurostat

Figure 66: Share (in %) of selected ICT sectors of EU-28 business economy in total enterprise births in 2009-2011 and 2012-2014



Source: Eurostat

A detailed analysis of the contribution of various sectors to enterprise births in 2014 shows that in all Member States for which data was available, 'wholesale and retail trade' and 'professional, scientific and technical activities' are always among the five most important sectors. The 'construction', 'accommodation and food services' and 'administrative and support service activities' sectors are also often among the top five sectors. (Table 38 in Annex I.23).

A detailed review of the contribution of various high-tech sectors reveals notable differences across Member States (Table 39 in Annex I.23).

- The 'ICT manufacturing' and 'ICT wholesale' sectors account for very few enterprise births in all Member States.
- However, the 'ICT services' sector (which, in the EU-28 as whole, accounted for about 5 % of enterprise births in 2014) plays a more important role in Estonia, Latvia, Luxembourg, the Netherlands, Romania, Sweden and the United Kingdom. In the latter country, the sector accounted for 9.1 % of all enterprise births in 2014.
- Similarly, the 'online retail trade' sector, which contributed 2.6 % of all enterprise births in the EU in 2014, accounted for a markedly higher proportion of enterprise births in Estonia, Finland, the Netherlands, Poland, Slovakia, and Sweden. In the case of the Netherlands, almost 8 % of all enterprise births occurred in this sector.

'ICT services' contributed a notable proportion of business births in EE, LU, LV, NL, RO, SE and UK in 2014, while 'online retail trade' generated a markedly higher proportion of enterprise births in EE, FI, NL, PL, SE and SK

8.2 Age distribution of the enterprise population

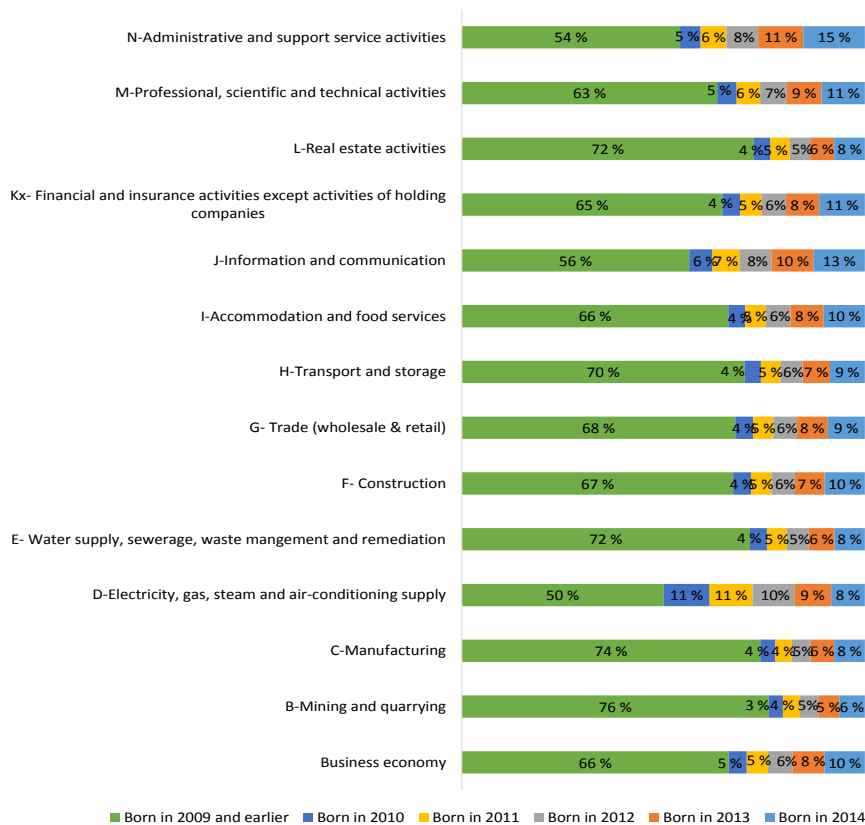
KEY FINDINGS

- In the EU-28 business economy, the age pyramid of the enterprise population has a large base of enterprises (60% of all enterprises) which have been in existence for 5 years or more. At the top of the age pyramid, only 10% of enterprises are one year old.
- Some ICT industries, namely 'Online retail trade' and 'ICT services', are characterised by a greater presence of firms less than 5 years old.

An analysis of the age distribution of active enterprises in different economic sectors of the EU-28 business economy in 2014, provides an additional perspective on their general characteristics.

- Typically, more than 60% of firms are at least 5 years old, and between 6 % and 15 % are less than 1 year old (Figure 67).
- In contrast, in the 'ICT services' sector and, especially in 'online retail trade', there are fewer older enterprises (Figure 68).

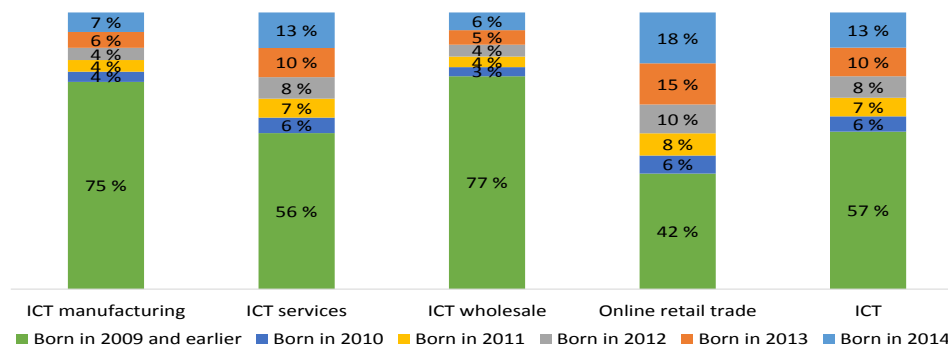
Figure 67: Age distribution of active enterprises in EU-28 business economy in 2014 (% of total population)



Source: Eurostat

Note: The sum of the different age groups may not add up to 100 due to rounding

Figure 68: Age of active enterprises in EU-28 ICT sectors in 2014 (% of total population)



Source: Eurostat

Note: The sum of the different age groups may not add up to 100 due to rounding

8.3 Scale-ups

KEY FINDINGS

- There exist only limited data on the pace at which newly-created firms scale-up in the years following their birth.
- But, in general, firms do not scale up rapidly. Among the whole enterprise population (i.e. newly-born firms and older firms) in the EU-28 business sector, 9.2% of firms having at least 10 employees at the beginning of their growth spurt show sustained annual growth in employment of 10% or more over a period of 3 years.
- Data on individual enterprises for a number of countries (Estonia, France, Ireland, Lithuania and the United Kingdom) show that, among young enterprises, the vast majority have not created any jobs by their fifth anniversary or have added only a

very small number of employees. The percentage of such firms having added more than 50 jobs ranged from 0.14% in France to 0.43% in the United Kingdom.

- In the EU-28 Member States, the high-growth firms are mostly in the services sector, particularly in the 'information and communication' sector.

In the absence of comprehensive data on scale-ups, the discussion below provides information on the relative importance of high-growth enterprises or 'gazelles' in the population of active enterprises in the business economy.⁵⁷

Box 6

Definition of high-growth enterprises

High-growth enterprises are enterprises with at least 10 employees at the beginning of their growth spurt and showing average annualised growth in number of employees greater than 10% per annum over a three year period.

Definition of gazelles

Gazelles are the high-growth enterprises that are up to five years old with average annualised growth (turnover or employment) greater than 10% per annum, over a three year period.

Source: Eurostat Metadata file for Business Demography data at http://ec.europa.eu/eurostat/cache/metadata/en/bd_esms.htm

A large body of literature exists on the phenomenon of high-growth firms, with many studies linking high-growth to particular characteristics of firms. In particular, some literature⁵⁸ suggests that:

- Firms experiencing high-growth are, on average, younger than their counterparts which are not experiencing high growth.
- Smaller firms show higher growth rates than larger firms.
- The high growth is observed only for a limited number of years.
- Contrary to typical expectations, high-growth firms are not concentrated in the technology sector, but can be found in any sector. Moreover, some studies suggest that high-growth firms are overrepresented in the services sector.
- However, knowledge intensive firms are overrepresented among high-growth firms.

Among EU-28 Member States, only 12 Member States provide information on gazelles (Figure 69), but in all these countries, gazelles account for at most 4.8 % of all active enterprises in Latvia).

In fact, in the majority of these Member States (Czech Republic, France, Italy, Luxembourg, Portugal, Romania, Slovakia and Spain), the gazelles account for no more than 1.5 % of the population of active enterprises.

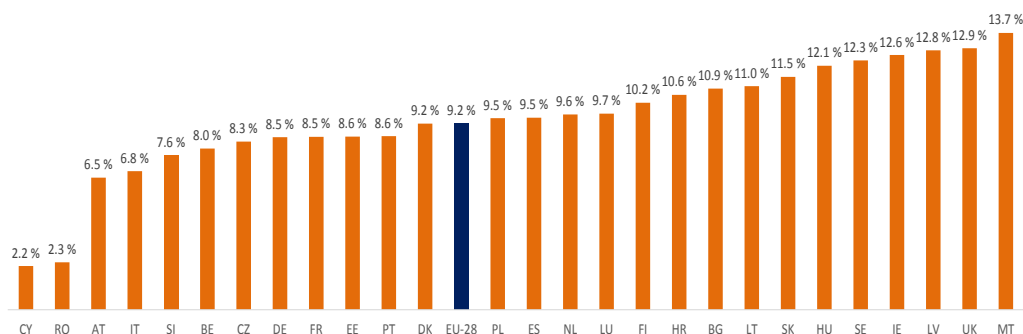
⁵⁷ See Eurostat Metadata file for Business Demography data at http://ec.europa.eu/eurostat/cache/metadata/en/bd_esms.htm.

⁵⁸ Moreno, A., and Coard, A. (2015). High-Growth Firms: Stylized Facts and Conflicting Results. Science Policy Research Unit Working Paper Series. SWPS 2015-05 (February) and Audretsch, D. B. (2012). Determinants of High-Growth Entrepreneurship. Report prepared for the OECD/DBA International Workshop on "High-growth firms: local policies and local determinants".

Figure 69: Share of gazelles in population of active enterprises -2014

Source: Eurostat

The share of high-growth firms in the EU business economy is somewhat higher (Figure 70), averaging 9.2 % across the EU-28 in 2014. In Malta, the United Kingdom, Latvia, Ireland, Sweden and Hungary the share of high-growth firms in the business economy is more than 12 %. In contrast, Belgium, Slovenia, Italy, Austria, Romania and Cyprus all underperformed the EU-28 average by more than one percentage point. The share of high-growth firms in the business economy is particularly low in Cyprus (2.2 %) and Romania (2.3 %).

Figure 70: Share of high-growth firms in the business economy -2014

Notes: In line with the European Commission Implementing Regulation (EU) No 439/2014, high-growth enterprises are defined as firms with at least 10 employees in the beginning of their growth, and average annualised growth in number of employees greater than 10 % per annum over a 3-year period. The share of high-growth enterprises is the number of high-growth enterprises divided by the number of active enterprises with at least 10 employees.

Source: Eurostat (http://ec.europa.eu/eurostat/web/products-datasets/-/bd_9pm_r2, last accessed 13 July 2017).

Due to data availability on Eurostat, the data on high-growth firms refers to the 'business economy', which covers sections B-N including section K.

However, despite their rarity, high-growth firms provide a disproportionately high number of jobs and contribute to economic growth. For example, a recent study showed ⁵⁹ that, between 2002 and 2008, half the new jobs created by existing businesses in the UK were generated by the top six percent of highest growing UK businesses. Similar results have been found, for example, in the case of Finland (Deschryvere, 2008)⁶⁰, and in Germany, Italy, Netherlands, Spain, Sweden and Quebec (Canada) (Schreyer, 2000)⁶¹.

⁵⁹ NESTA (2009). 'The vital 6 per cent: How high growth innovative businesses generate prosperity and jobs'. NESTA: London.

⁶⁰ Deschryvere, M. (2008). 'High growth firms and job creation in Finland'. ETLA discussion paper. No. 1144.

⁶¹ Schreyer, P. (2000). 'High growth firms and employment'. OECD Science, Technology and Industry Working Papers 2000/03. OECD Publishing: Paris.

An analysis of country-specific microdata on employment creation in Estonia (Figure 71), France (Figure 72), Ireland (Figure 73), Lithuania (Figure 74), and the United Kingdom (Figure 75) shows a similar trend.

The vast majority of new firms in Estonia which survived for five years (14,015 new firms or 69.7 % of all new firms), did not create any additional employment. Moreover, 1,979 (9.8 %) of surviving firms actually had fewer employees after five years. However, a small number of firms - 15 (0.1 %) were each responsible for creating more than 100 additional jobs. A further 34 firms (0.2 %), created between 50 and 100 additional jobs each.

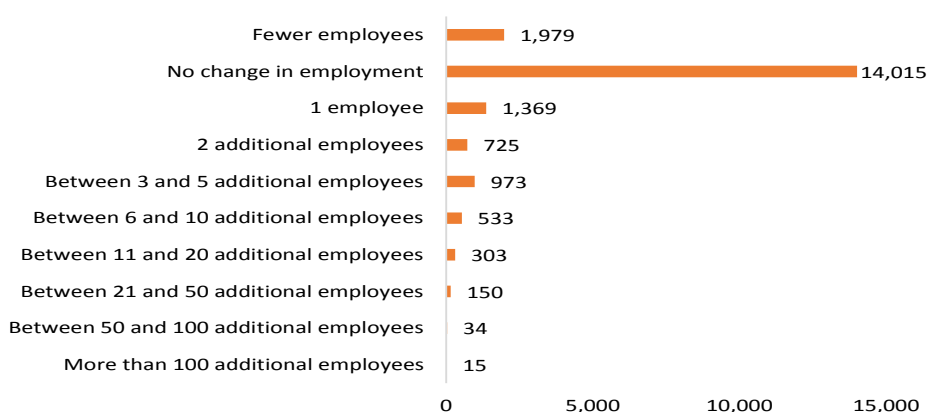
Job creation in France shows a somewhat a different picture. The majority of firms surviving for five years (42,933 or 41.3 %) created additional jobs, although nearly half of these (18,288 or 17.6 %) only created one job each. The share of firms with fewer jobs five years after creation was also relatively large (27,156 or 26.1 %). 33,823 (or 32.5 %) of firms did not create any additional employment after five years.

Similarly, in Ireland, 23,824 (72.8 %) of new firms which survived for five years did not create any additional employment, whilst 1,792 firms (5.5 %) shrank. Only 7,088 (21.7 %) of firms which survived for five years created additional jobs, with 643 firms (2.0 % of job-creating firms) creating more than 9 additional jobs each.

In Lithuania, 556 (48.1 %) of new firms which survived for five years did not create any additional employment, whilst 81 firms (7.0 %) shrank. 518 (44.8 %) of firms which survived for five years created additional jobs, with 18 firms (3.5 % of job-creating firms) creating more than 8 additional jobs each.

Job creation in the UK showed a similar picture. Again, the majority of firms surviving for five years (231,392 or 52.2 %) did not create any additional employment, while 60,345 (13.6 %) of firms had fewer employees after five years. However, a small number of firms, 727 (0.2 %), were again each responsible for creating more than 100 additional jobs. Furthermore, 85 firms (11.7 % of those which created more than 100 jobs), were responsible for creating more than 500 jobs each.

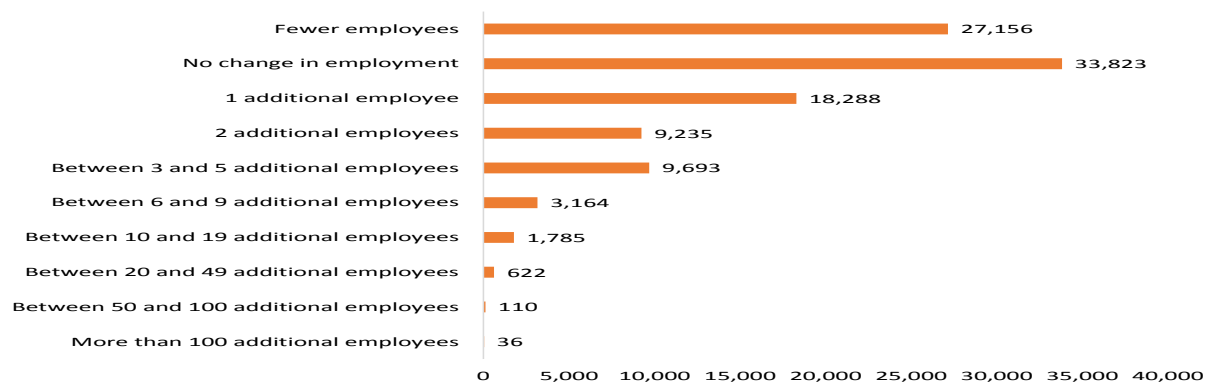
Figure 71: Estonia: employment creation by new firms having survived five years, based on firms created in the period 2008 to 2011



Source: Statistics Estonia

Note: number of firms is shown next to bars in the figure. Number of employees includes salaried and non-salaried employees.

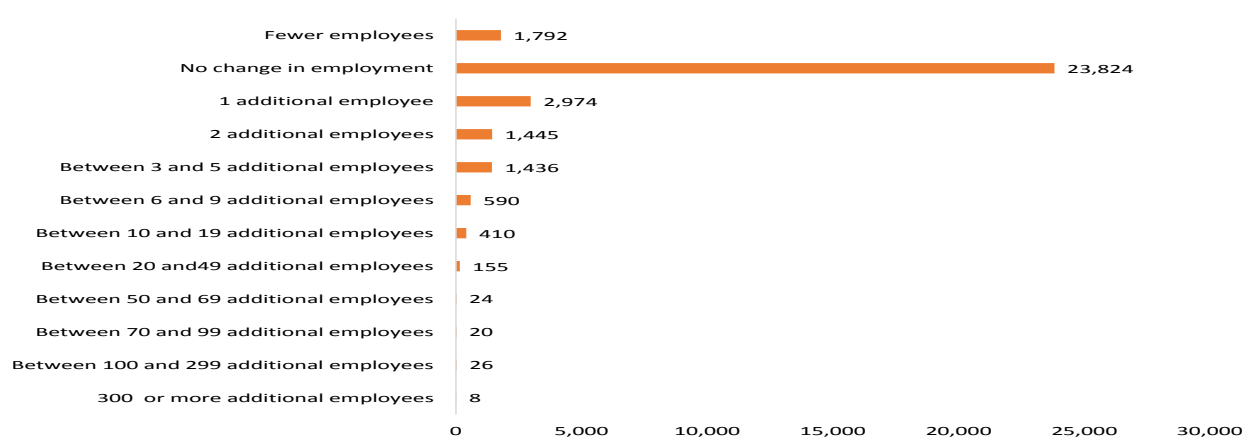
Figure 72: France: employment creation by new firms having survived five years, based on firms created in the period 2008 to 2009



Source: Insee France

Note: number of firms is shown next to bars in the figure. Number of employees includes only salaried employees.

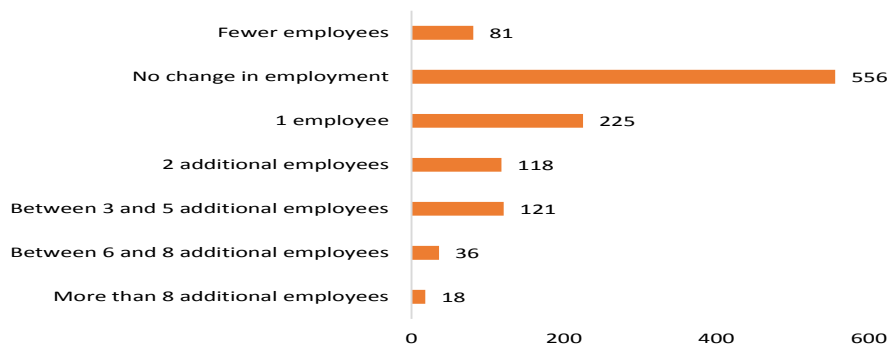
Figure 73: Ireland: employment creation by new firms having survived five years, based on firms created in the period 2008 to 2009



Source: Central Statistics Office Ireland

Note: number of firms is shown next to bars in the figure. Number of employees includes salaried and non-salaried employees.

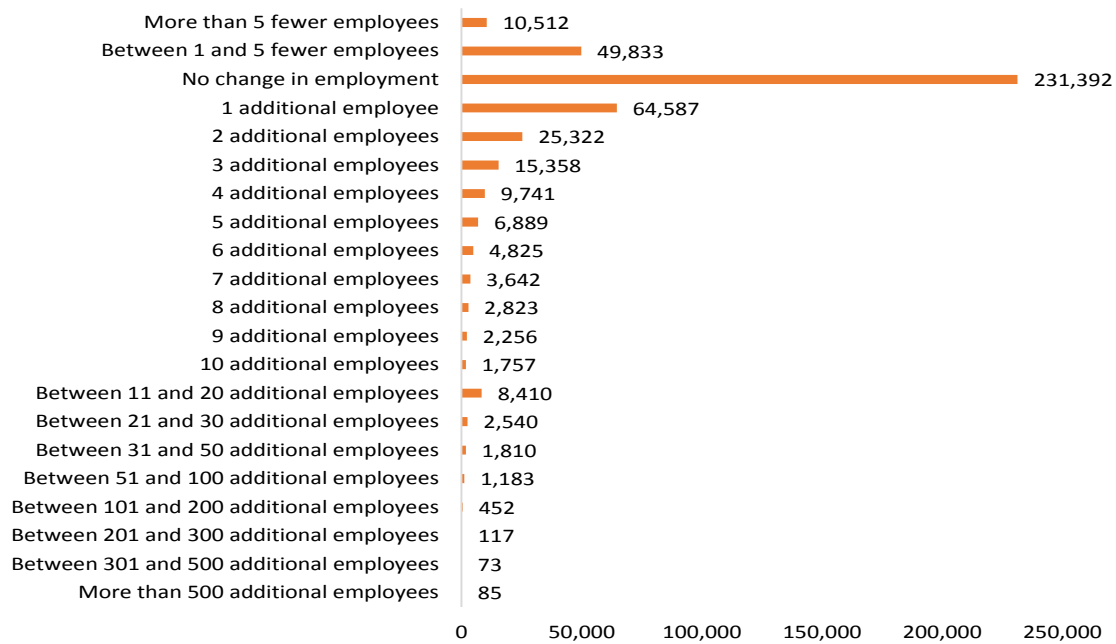
Figure 74 Lithuania: employment creation by new firms having survived five years, based on firms created in the period 2007 to 2009



Source: Statistics Lithuania

Note: number of firms is shown next to bars in the figure. Number of employees includes salaried and non-salaried employees.

Figure 75: United Kingdom: employment creation by new firms having survived five years, based on firms created in the period 2008 to 2011 – United Kingdom



Source: Office for National Statistics

Note: number of firms is shown next to bars in the figure. Number of employees includes salaried and non-salaried employees.

Consistent with the literature, service industries show a high percentage of high-growth enterprises, particularly the ‘information and communication’ sector, which was responsible for the largest share of high-growth firms in thirteen (48.1%) of the 28 Member States for which data was available, as well as in the EU-28 overall (Figure 76).

‘Administrative and support service activities’, ‘electricity, gas, steam and air conditioning supply’, ‘mining and quarrying’, ‘real estate activities’ and ‘transportation and storage are among the other sectors with the five largest shares of high-growth firms in one or several EU-28 Member States.

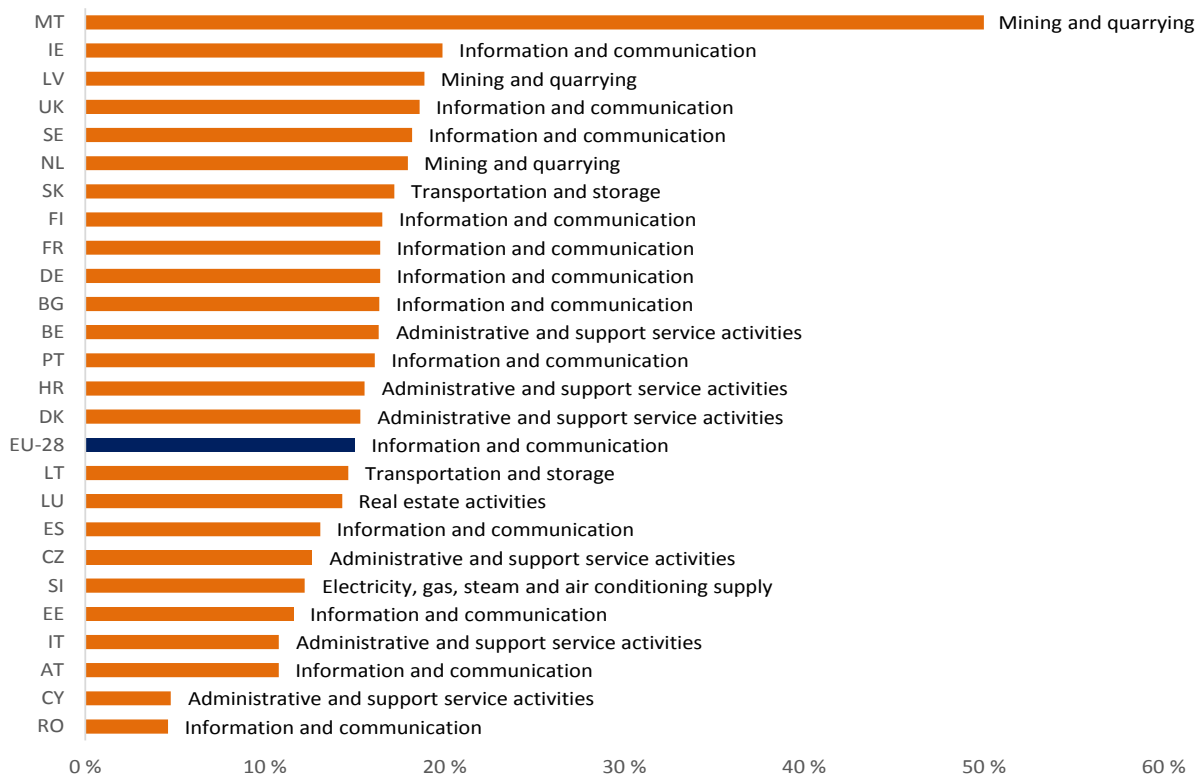


Figure 76: Sectors with highest share of high-growth firms -2014

Source: Eurostat (http://ec.europa.eu/eurostat/web/products-datasets/-/bd_9pm_r2, last accessed 13 July 2017).

Due to data availability on Eurostat, the data on high-growth firms refers to the 'business economy', which covers sections B-N including section K.

Notes: In line with the European Commission Implementing Regulation (EU) No 439/2014, high-growth enterprises are defined as firms with at least 10 employees in the beginning of their growth, and average annualised growth in number of employees greater than 10 % per annum over a 3-year period. The share of high-growth enterprises is the number of high-growth enterprises divided by the number of active enterprises with at least 10 employees. Data missing for Greece.

Despite the previously discussed known characteristics of high-growth firms, such firms are hard to identify at the outset. In particular the literature finds that growth is generally inconsistent among high growth firms; that is, firms experiencing high growth in one period are not necessarily more likely to experience high growth in the following periods, and only a very small number of firms experience constant growth.⁶²

Since early identification of potential high-growth firms is problematic, it is difficult to create policies that directly target them. Instead, the OECD (2010)⁶³ recommends that the appropriate policy measure is to create an environment conducive for firms to experience high growth.

While it may be challenging to identify a priori high-growth SMEs, a recent study by Eurofound, which focused on job creation by SMEs, identified a number of important internal and external factors. In general, SMEs which tend to create jobs are:

- young (less than 5 years in existence);
- innovative;

⁶² Moreno, F., and Coard, A. (2015). High-Growth Firms: Stylized Facts and Conflicting Results. Science Policy Research Unit Working Paper Series. SWPS 2015-05 (February).

⁶³ OECD (2010). 'High-Growth Enterprises: What Governments Can Do to Make a Difference'. OECD Studies on SMEs and Entrepreneurship. OECD Publishing: <http://dx.doi.org/10.1787/9789264048782-en>.

- active internationally;
- pursuing high growth strategies;
- pursuing sound investment strategies;
- based in urban areas;
- run by skilled managers; and,
- are competitive and face a good demand for their products and services.

These internal conditions need to be complemented by a number of external conditions for the high-growth SME ecosystem to flourish. These external factors include:

- positive public perception and image of entrepreneurship
- favourable macroeconomic conditions
- business regulations, labour legislation and tax laws and regulations which are supportive
- effective and efficient public services
- accessible external finance
- availability of skilled resources (staff and managers)
- “reasonable” labour and other production costs

These external conditions are also important for start-ups, and a number of factors which can help foster an environment in which start-ups can flourish and scale up are discussed in greater detail in the next section.

8.4 What conditions are necessary for start-ups and scale-ups?

KEY FINDINGS

- Policies to support start-ups and scale-ups target 3 distinct stages in the life of such young enterprises, namely the stand-up phase to stimulate entrepreneurship, the start-up phase and the scale up phase.
- In general, entrepreneurship is stimulated by a favourable entrepreneurial culture, in particular where entrepreneurship has a positive image and potential entrepreneurs are equipped with right skills or can access such skills.
- For the start-up phase, key factors are access to capital, a general legal and regulatory framework which encourages entrepreneurship, access to a skilled labour force and to good business infrastructure (work space, IT, etc.), mentoring and a thriving eco-system of young firms.
- Governments can stimulate the birth of start-ups by removing unnecessary regulations and easing tax burdens, creating incentives to businesses and/or investors, providing funding and support programmes and promoting and raising the profile of start-ups and the start-up ecosystem.
- In the scale-up phase, key factors continue to be access to finance, skills and business infrastructure. In addition, a supporting macroeconomic and regulatory environment as well as supporting labour market laws and regulations are essential.

As noted in the 2014 World Economic Forum Insight Report: *Enhancing Europe’s Competitiveness – Fostering Innovation-driven Entrepreneurship in Europe*⁶⁴, policy makers should aim to understand and pay attention to each phase of the entrepreneurial life-cycle and the challenges specific to each phase; specifically:

⁶⁴ World Economic Forum (2014). *Enhancing Europe’s Competitiveness – Fostering Innovation-driven Entrepreneurship in Europe*. Insight Report.

- In the **stand-up** phase: to assess what drives individuals to start their own business and to create an environment that motivates individuals to do so.
- In the **start-up** phase: to identify which factors help an entrepreneur to be successful and to create an environment that helps entrepreneurs to succeed.
- In the **scale-up** phase: to understand which factors enable a business to grow and expand successfully and to create an environment that is conducive to growth.

The following sections will discuss each of these phases in turn and highlight the challenges faced and the key conditions necessary to help businesses succeed.

Stand-up

The 2014 *World Economic Forum Insight Report* identifies three core factors which foster an entrepreneurial culture: a **positive attitude** towards entrepreneurship, the **necessary skills** to start a business, and a **cultural and social framework** that encourages self-starters.

For their report, the World Economic Forum surveyed 1,132 Europeans who had either experience in entrepreneurship or were interested in it. The results suggest that the top three factors motivating entrepreneurs to 'stand-up' were:

- the opportunity to work independently and have greater control of their work,
- the freedom to create an innovative offering to take to market or to pursue an idea,
- personal challenge.

Knowing these motivating factors can help policy makers create policies which foster a positive attitude towards self-employment and motivate entrepreneurs to start their own businesses. The report also suggests that policy-makers might do well by reinforcing such non-monetary benefits of self-employment.

In addition, policy makers should highlight the mechanisms already in place to protect against unemployment and financial risks, which were seen as some of the main opportunity costs of starting a business. In particular, the report identifies fear of failure as a frequent roadblock to self-employment in Europe.

The report also emphasises the importance of entrepreneurship education, which was regarded as the most meaningful form of prior exposure to entrepreneurship by the majority (54%) of respondents.

Finally, the report stressed the crucial role that can be played by a positive cultural and societal framework which encourages self-starters and inspires entrepreneurs to become self-employed. In this respect, early exposure to entrepreneurship, entrepreneurial thinking and peer-level success stories were mentioned as crucial in spreading a culture that fosters entrepreneurship and high levels of ambition.

Start-up

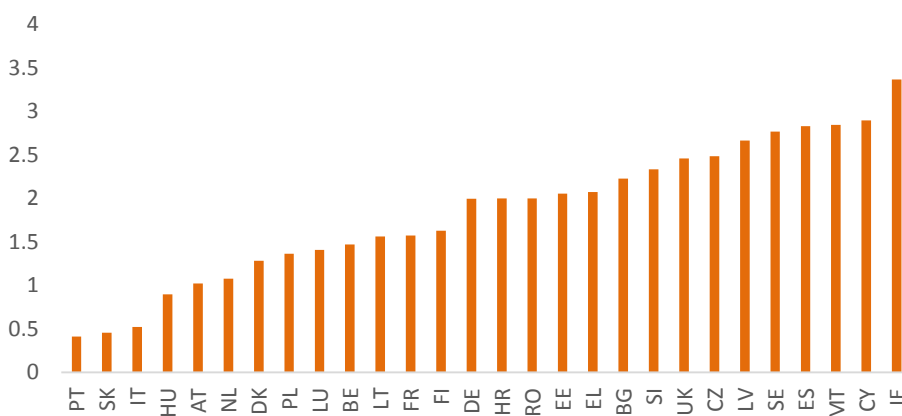
The number one challenge in the start-up phase, as identified by the 2014 World Economic Forum Insight Report, was **access to capital**. In particular, the report pinpoints the following key issues: a general lack of appetite for investing in entrepreneurial ventures as an asset class; a 'missing middle' between initial business angel investments (\leq € 500,000) and typical venture capital funding (\geq € 3 to 5 million); and an over-reliance on financing from public funds. An increased demand for collateral when trying to obtain bank loans following the 2008/09 financial crisis was also mentioned as a source of difficulty for entrepreneurs trying to obtain financing. The report also highlighted a divide within the EU-28. Financing is much more easily obtained in some Member States - particularly Northern European countries, such as Finland, Luxembourg and Sweden - and much harder in others, such as Greece, Italy and Slovenia.

Greater ease in acquiring the necessary **capital** for start-ups was also identified in Up Global's 2014 white paper, *Fostering a Startup and Innovation Ecosystem*⁶⁵. It gives examples of how this could be achieved by offering financial packages tailored to start-ups and also by creating tax incentives for investors to invest in start-ups. Furthermore, it highlights the need for flexible funding systems which change with the needs of the entrepreneurial ecosystem.

Regulatory frameworks were also identified by the 2014 *World Economic Forum Insight Report* as a frequently mentioned barrier to starting a business in Europe. Moreover, the report highlights the differences across Europe, with regulatory barriers being much higher in some countries than in others.

This discrepancy is further illuminated by examining the 2013 *OECD Barriers to Entrepreneurship indicators*⁶⁶ for complexity of regulatory procedures (Figure 77). Specifically, according to this indicator, regulatory procedures are most complex in Ireland, Cyprus, Malta and Spain and least complex in Portugal, Italy, Hungary, Austria and the Netherlands.

Figure 77: Complexity of regulatory procedures in EU-28 countries



Source: OECD

A further important element in supporting an entrepreneurial ecosystem was identified in Up Global's *Fostering a Startup and Innovation Ecosystem* white paper, namely a stable regulatory environment which is supportive of start-ups. In particular, the white paper suggests that countries should focus on improving the following: the ease of starting and closing a business; tax policy; intermediary liability protection; patent protection; formalising alternative funding models; and research and development.

The 2016 European Commission report on the *Dynamic Mapping of Web Entrepreneurs and Startups' Ecosystem Project*⁶⁷ further highlights a number of barriers and opportunities that exist within the start-up ecosystem, as discussed below.

First of all, the report highlights the important role played by successful **role models**, by helping to excite and inspire new starters, by showing ways to succeed and, in many cases, by reinvesting in the start-up community via guidance or financial help. The report therefore stresses the importance of identifying such role models and showcasing them to start-ups. This crucial factor is also underlined in Up Global's white paper, which further emphasises the importance of accepting failure as part of the learning process for success, rather than penalising those who fail. Additionally, the white paper identifies the need to encourage young people to become entrepreneurs and to learn the necessary

⁶⁵ Up Global (2014). *Fostering a Startup and Innovation Ecosystem*. White Paper. Available at: <https://www.slideshare.net/cuevasm1/fostering-a-startup-and-innovation-ecosystem> [accessed 10 July 2017]

⁶⁶ The indicators are available on the OECD Indicators of Product Market Regulation Homepage: <http://www.oecd.org/eco/growth/indicatorsofproductmarketregulationhomepage.htm> [accessed 12 July 2017]

⁶⁷ European Commission (2016). *Dynamic Mapping of Web Entrepreneurs and Startups' Ecosystem Project*. Final Report.

skills to succeed, as well as to encourage communication between public and private sectors, allowing businesses to help governments develop policies that support innovation.

Secondly, **access to talent and skills** was found, by the European Commission report, to be a key challenge for start-ups. In particular, a lack of technical and higher level skills, such as programming, was identified, along with a lack of entrepreneurial and marketing skills.

The European Commission also identifies **access to funding** as a key issue. While early stage funding was found to be generally available, the report specifically highlights a lack of follow-on funding, which especially affects the growth of start-ups.

Another area identified in the report as being important for continued focus is **connections between ecosystems**, for example, through sharing of ideas and skills. Networking and other **opportunities for personal interaction** were also pinpointed as vital for creating links between businesses and opening opportunities such as new markets, supply chains, or simply to gain support and advice.

Additionally, **good infrastructure**, such as high-speed internet and ample provision of work places, along with business incubators and business support schemes, were all seen as important by businesses.

In terms of education, the report suggests there has already been a shift in **cultural views towards entrepreneurship**, accelerated by entrepreneurial education, which provides entrepreneurs with the tools necessary to start and run their own businesses.

The report also highlights the greater appeal of more **developed start-up ecosystems** (such as Berlin and London) to investors and entrepreneurs. Moreover, the report suggests policy makers should focus on increasing the development of smaller ecosystems, providing more support and encouraging collaboration rather than competition between ecosystems.

Additionally, Up Global's 2014 white paper identifies supporting **start-up density** as key to helping entrepreneurial ecosystems. Suggested measures to achieve this include: supporting cluster growth; creating physical hubs providing support such as training and mentoring, networking opportunities, and facilitating access to finance for starters; boosting awareness of available opportunities and celebrating successes; and building networks between innovators, mentors and university research networks.

Finally, the European Commission report identifies a range of views on the **role of governments** and how they could help, focusing on the following four main areas:

- removing unnecessary regulations and easing tax burdens,
- creating incentives to businesses and/or investors,
- providing funding and support programmes,
- promoting and raising the profile of start-ups and the start-up ecosystem.

Scale-ups

Section 8.3 highlighted the importance of high-growth companies or 'gazelles' in terms of both employment and economic growth. A key driver of such growth is innovation, with a recent study⁶⁸ highlighting that innovative firms grow twice as fast as firms that fail to innovate. Moreover, firms that are growing faster are also more likely to continue to innovate. Consequently, policies which are supportive of innovation are vital. The study suggests that governments ought to support excellence and innovation with the the key approach being the development of policies which foster the emergence of high-growth firms *without* trying to predict which firms will experience high-growth. However, in order to understand what to focus on in terms of policies, it is also crucial to understand the

⁶⁸ NESTA (2009). The vital 6 per cent: How high-growth innovative businesses generate prosperity and jobs. NESTA: London.

challenges faced by businesses in the growth process. Therefore, this section aims to identify the key challenges faced by businesses in the scale-up phase.

The 2014 Scale-up report⁶⁹ examines the challenges faced by scale-ups and makes recommendations on how to overcome these challenges. The number one challenge faced by scale-up leaders is finding the right staff who have the skills that scale-ups need. **Growing companies need to recruit employees with the right skills**, in particular technical, financial and digital skills, as pointed out in the Commission's 2016 communication 'Europe's next leaders: the Start-up and Scale-up Initiative'. Young people should be made aware of the skills they need for the jobs of the future; scale-ups should promote career opportunities to both employed and unemployed adults; and barriers to recruiting overseas talent should be removed.

Accessing talent was also emphasised in Up Global's white paper as crucial to supporting an entrepreneurial ecosystem. Specifically, the white paper urges governments to invest in human capital in order to attract the right talent to support business growth. To do this, the suggestion is that governments should strive to create more dynamic labour markets, including pro-growth investment and immigration policies; should promote educational opportunities that encourage the entrepreneurial ecosystem; and also promote diversity in the workplace.

Furthermore, developing the ability of the scale-ups leadership teams to successfully face changing demands of rapid growth is a key challenge. In this regard, there is a clear need for scale-up leaders to be connected with entrepreneurs who have previous experience of scaling up businesses.

In addition, another report on SMEs⁷⁰ identified the need for focused business support in order to encourage entrepreneurship and help businesses to grow. In particular, the report pinpointed six major ways this could be achieved:

- **Identify and supply potential entrepreneurs with information** on how to start a business and the support available.
- **Improve business skills** with targeted business education within the education sector, especially in industries in which there is a big gap between business failure and start-up rates.
- **Provide information, education and training on customer acquisition and retention** in an easily digestible manner.
- **Encourage export** by aiming support at SMEs which do not currently export.
- **Increase provision of financial education** to SMEs.
- **Provide intensive support for high-growth firms.**

A number of additional specific **barriers** are faced by companies wishing to create new products, offer new services, export overseas, thus to scale-up. Companies have difficulties in supplying to large corporations and the public sector, and also in making the leap into foreign markets. Indeed, accessing markets remains a major challenge for the scale-ups. Many innovative young firms fear that if they grow too big they will be penalised by more burdensome rules, even without cross-border expansion. Identifying and complying with regulatory and administrative rules and formalities can be time-consuming when information about national and EU rules is often dispersed and difficult to implement. Understanding all the tax, company, labour law and other requirements is a real challenge. The length of time taken to gain regulatory approval for new products is another specific obstacle. With all this in mind, greater interaction between scale-ups and established companies is needed and more scale-ups would need to be included in trade missions. Furthermore, there should be increased targeting of scale-up companies with regard to public procurement. The report advocates for the use of research and

⁶⁹ Coutu, S. (2014). The Scale-up Report on UK Economic Growth. Available at: <http://www.scaleupinstitute.org.uk/scale-up-report/> [accessed 11 July 2017].

⁷⁰ Experian (2010). The Insight Report. Tomorrow's champions: finding the small business engines for economic growth. Available at: <http://www.experian.co.uk/assets/insight-reports/brochures/experian-insight-report-q4-2010.pdf> [accessed 12 July 2017].

development budgets to drive innovation within public procurement. Moreover, it is important that scale-ups are able to access cutting edge research facilities.

As is the case in the start-up phase, **accessing financing** is also a major issue for entrepreneurs aiming to scale-up their businesses. Specifically, the *World Economic Forum Insight Report*⁷¹ indicates the greater difficulty in accessing growth capital in Europe compared to the US. Although there is no major difference between the EU and the US as regards the creation of new firms, it has been estimated⁷² that there could be up to 1 million new jobs created and up to €2 000 billion added to GDP in the EU over the next 20 years if the share of scale-ups would match that of the US.

In conclusion, it should be noted that despite the observed obstacles, there is no lack of innovative ideas and entrepreneurial spirit in Europe. Over recent years, the Commission has proposed a number of policies, such as the Capital Markets Union, the Single Market Strategy, and the Digital Single Market to benefit start-ups and scale-ups. **In its 2016 communication 'Europe's next leaders: the Start-up and Scale-up Initiative', the European Commission brought together a range of existing and new actions to create a more coherent framework to surpass existing barriers and thus allow start-ups and scale-ups to grow across Europe, and beyond.** Obviously, working in partnership with all levels of government, in EU Member States, regions and cities and all stakeholders, including start-ups and scale-ups themselves, is necessary for the efficient and successful implementation of this crucial initiative.

⁷¹ World Economic Forum (2014). 'Enhancing Europe's Competitiveness – Fostering Innovation-driven Entrepreneurship in Europe'. Insight Report.

⁷² Danish SME Envoy Report, 2016, Scale-up Companies – is a new policy agenda needed?

REFERENCES

- Abraham, K. G., Haltiwanger, J., Sandusky, K., and Spletzer, J. R. (2016). 'Measuring the Gig Economy'. Available at: <http://www.sole-jole.org/16375.pdf> [accessed 29 June 2017].
- Audretsch, D. B. (2012). 'Determinants of High-Growth Entrepreneurship'. Report prepared for the OECD/DBA International Workshop on "High-growth firms: local policies and local determinants"
- Blanchflower, D. G. and Oswald, A. J. (1998). 'Entrepreneurship and the youth labour market problem, a report to the OECD'. Dartmouth College, Hanover, NH.
- Botrić, V., and Tomić, I. (2016). 'Self-employment of the young and the old: exploring effects of the crisis in Croatia'. [Working paper]. Available at: www.eizg.hr/Download.ashx?FileID=7f5e46f3-1b6b-465e-a5fd-e205fee63fe9 [accessed 1 August 2017]
- Brinkley, I. (2016). 'In search of the Gig Economy'. The Work Foundation, Lancaster University. Available at: http://www.theworkfoundation.com/wp-content/uploads/2016/11/407_In-search-of-the-gig-economy_June2016.pdf [accessed 29 June 2017].
- Coutu, S. (2014). 'The Scale-up Report on UK Economic Growth'. Available at: <http://www.scaleupinstitute.org.uk/scale-up-report/> [accessed 11 July 2017]
- De Stefano, V. (2016). The rise of the 'just-in-time workforce': on-demand work, crowd work and labour protection in the 'gig-economy', *Conditions of Work and Employment Series No. 71*. Available at: http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_443267.pdf [accessed on 29 June 2017].
- Eichhorst, W., Hinte, H., Rinne, U. and Tobsch, V. (2016). 'How Big is the Gig? Assessing the Preliminary Evidence on the Effects of Digitalization on the Labor Market', IZA Policy Paper No. 117. Available at: <http://ftp.iza.org/pp117.pdf> [accessed 29 June 2017]
- European Commission (2016). 'Dynamic Mapping of Web Entrepreneurs and Startups Ecosystem Project'. Final Report
- Evans, D. S. and Jovanovic, B. (1989): 'An estimated model of entrepreneurial choice under liquidity constraints.' *Journal of Political Economy*. Vol. 97. Nr. 4. pp. 808-827.
- Experian (2010). The Insight Report. 'Tomorrow's champions: finding the small business engines for economic growth'. Available at: <http://www.experian.co.uk/assets/insight-reports/brochures/experian-insight-report-q4-2010.pdf> [accessed 12/07/2017]
- Hathaway, I (2015). 'The Gig Economy Is Real If You Know Where to Look', *Harvard Business Review*. Available at: <https://hbr.org/2015/08/the-gig-economy-is-real-if-you-know-where-to-look> [accessed 29 June 2017].
- House of Commons Work and Pensions Committee (2017). 'Self-employment and the gig economy Thirteenth Report of Session 2016-17'. Available at: <https://www.publications.parliament.uk/pa/cm201617/cmselect/cmworpen/847/847.pdf> [accessed 29 June 2017].
- Kässi, O. and Lehdonvirta, V. (2016). 'Online Labour Index: Measuring the Online Gig Economy for Policy and Research'. Paper presented at Internet, Politics & Policy 2016, Oxford, UK, 22-23 September 2016. Available at: <http://ipp.oii.ox.ac.uk/sites/ipp/files/documents/OLI%25202016-09-19.pdf> [accessed 29 June 2017].
- Lampel J, Germain O. (2016) Creative industries as hubs of new organizational and business practices. *Journal of Business Research*. Jul;69(7):2327-2333.
- Moreno, A., and Coard, A. (2015). 'High-Growth Firms: Stylized Facts and Conflicting Results'. Science Policy Research Unit Working Paper Series. SWPS 2015-05 (February)

NESTA (2009). 'The vital 6 per cent: How high growth innovative businesses generate prosperity and jobs'. NESTA: London.

OECD (2016). 'Entrepreneurship at a Glance 2016'. doi:10.1787/entrepreneur_aag-2016-en

The Scaleup Institute (2016). 'The Scaleup review on Economic Growth 2016'. Available at: http://www.scaleupinstitute.org.uk/wp-content/uploads/2016/11/Scaleup_full_report_ReSET_021216_Final2-2.pdf [accessed 11 July 2017]

Up Global (2014). 'Fostering a Startup and Innovation Ecosystem'. White Paper. Available at: <https://www.slideshare.net/cuevasm1> [accessed 10 July 2017]

Ursula Huws and Simon Joyce (2016). 'Crowd working survey. Size of the UK's 'Gig Economy' for the first time.' Available at: <http://www.feps-europe.eu/assets/a82bcd12-fb97-43a6-9346-24242695a183/crowd-working-surveypdf.pdf> [accessed 29 June 2017].

World Economic Forum (2014). 'Enhancing Europe's Competitiveness – Fostering Innovation-driven Entrepreneurship in Europe'. Insight Report.

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ANNEX 1 THE SME PERFORMANCE REVIEW

The SME Performance Review is one of the main tools used by the European Commission to monitor and assess countries' progress in implementing the Small Business Act (SBA) on a yearly basis.

The SBA strives to foster SME development and remove obstacles to SME growth. It does not constitute a legal requirement but a series of guidance measures that can be adapted to suit each country's specific needs. This guidance is underpinned by ten core principles:

1. Entrepreneurship: Creating an environment in which entrepreneurs and family businesses can thrive and entrepreneurship is rewarded.
2. Second Chance: Ensuring that honest entrepreneurs who have experienced bankruptcy are promptly given a second opportunity to succeed.
3. Think Small First: Designing rules modelled on the "Think Small First" principle.
4. Responsive Administration: Making public administrations responsive to the needs of SMEs.
5. State Aid and Public Procurement: Adapting public policy tools to suit SME needs - facilitating SMEs' participation in public procurement and ensuring better access to State Aid for SMEs.
6. Access to Finance: Facilitating SMEs' access to finance and developing a legal and business environment conducive to the specific requirements of SMEs, including timely payments in commercial transactions.
7. Single Market: Helping SMEs to benefit more from the opportunities offered by the Single Market.
8. Skills and Innovation: Promoting the enhancement of skills in the SME workforce and all forms of innovation.
9. Environment: Enabling SMEs to transform environmental challenges into economic opportunities while acting sustainably.
10. Internationalisation: Encouraging SMEs to benefit from the growth of global markets and supporting them in this pursuit.

The SME Performance Review provides extensive information on the implementation of the measures from the SBA Action Plan and on the performance of SMEs in EU Member States.

ANNEX 2 LIST OF INDUSTRIES AT NACE 2 LEVEL IN NON-FINANCIAL & NON-MINING BUSINESS SECTOR

C10	Manufacture of food products
C11	Manufacture of beverages
C12	Manufacture of tobacco products
C13	Manufacture of textiles
C14	Manufacture of wearing apparel
C15	Manufacture of leather and related products
C16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
C17	Manufacture of paper and paper products
C18	Printing and reproduction of recorded media
C19	Manufacture of coke and refined petroleum products
C20	Manufacture of chemicals and chemical products
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations
C22	Manufacture of rubber and plastic products
C23	Manufacture of other non-metallic mineral products
C24	Manufacture of basic metals
C25	Manufacture of fabricated metal products, except machinery and equipment
C26	Manufacture of computer, electronic and optical products
C27	Manufacture of electrical equipment
C28	Manufacture of machinery and equipment n.e.c.
C29	Manufacture of motor vehicles, trailers and semi-trailers
C30	Manufacture of other transport equipment
C31	Manufacture of furniture
C32	Other manufacturing
C33	Repair and installation of machinery and equipment
D35	Electricity, gas, steam and air conditioning supply
E36	Water collection, treatment and supply
E37	Sewerage
E38	Waste collection, treatment and disposal activities; materials recovery
E39	Remediation activities and other waste management services
F41	Construction of buildings
F42	Civil engineering
F43	Specialised construction activities
G45	Wholesale and retail trade and repair of motor vehicles and motorcycles
G46	Wholesale trade, except of motor vehicles and motorcycles
G47	Retail trade, except of motor vehicles and motorcycles
H49	Land transport and transport via pipelines
H50	Water transport
H51	Air transport
H52	Warehousing and support activities for transportation
H53	Postal and courier activities
I55	Accommodation
I56	Food and beverage service activities
J58	Publishing activities
J59	Motion picture, video and television programme production, sound recording and music publishing activities
J60	Programming and broadcasting activities
J61	Telecommunications
J62	Computer programming, consultancy and related activities
J63	Information service activities
L68	Real estate activities
M69	Legal and accounting activities
M70	Activities of head offices; management consultancy activities
M71	Architectural and engineering activities; technical testing and analysis
M72	Scientific research and development
M73	Advertising and market research
M74	Other professional, scientific and technical activities
M75	Veterinary activities
N77	Rental and leasing activities
N78	Employment activities
N79	Travel agency, tour operator and other reservation service and related activities
N80	Security and investigation activities
N81	Services to buildings and landscape activities
N82	Office administrative, office support and other business support activities

ANNEX 3 DEFINITION OF DIFFERENT INDUSTRY GROUPINGS

Knowledge intensive services

The group of Knowledge intensive services (KIS) is classified according to EUROSTAT and regroups the following service industries (NACE 2 classification):

High tech services:

- J59 Motion picture, video and television programme production, sound recording and music publishing activities
- J60 Programming and broadcasting services
- J61 Telecommunications
- J62 Computer programming, consultancy and related activities
- J63 Information service activities
- M72 Scientific research and development

Market services:

- H50 water transport
- H51 Air transport
- M69 legal and accounting activities
- M70 Activities of head offices, management consultancy activities
- M71 Architectural and engineering activities; technical testing and analysis
- M73 Advertising and market research
- M74 Other professional, scientific and professional services
- N78 Employment activities
- N80 Security and investigation activities

Other KIS

- J58 Publishing activities
- M75 Veterinary activities

Less knowledge intensive services

Market services

- G45 Wholesale and retail trade and repair of motor vehicles and motorcycles
- G46 Wholesale trade except of motor vehicles and motorcycles
- G47 Retail trade, except of motor vehicles and motorcycle
- H49 Land transport and transport via pipelines
- H52 Warehousing and support activities for transportation
- I55 Accommodation
- I56 Food and beverage service activities
- L68 Real estate activities
- N77 Rental and leasing activities
- N79 Travel agency, tour operator reservation service
- N81 Services to buildings and landscape activities
- N82, Office administrative, office support and other business support activities;

Other

- H53 Postal and courier activities.

High tech industries

- C21 manufacture of basic pharmaceutical products and pharmaceutical preparations
- C26 manufacture of computer, electronic and optical products

Medium-high-tech industries

- C20 manufacture of chemicals and chemical products
- C27 manufacture of electrical equipment
- C28 manufacture of machinery and equipment n.e.c.
- C29 manufacture of motor vehicles, trailers and semi-trailers
- C30 manufacture of other transport equipment

Medium-low-tech industries

- C19 manufacture of coke and refined petroleum products
- C22 manufacture of rubber and plastic products
- C23 manufacture of other non-metallic mineral products
- C24 manufacture of basic metals
- C25 manufacture of fabricated metal products, except machinery and equipment
- C33 repair and installation of machinery and equipment

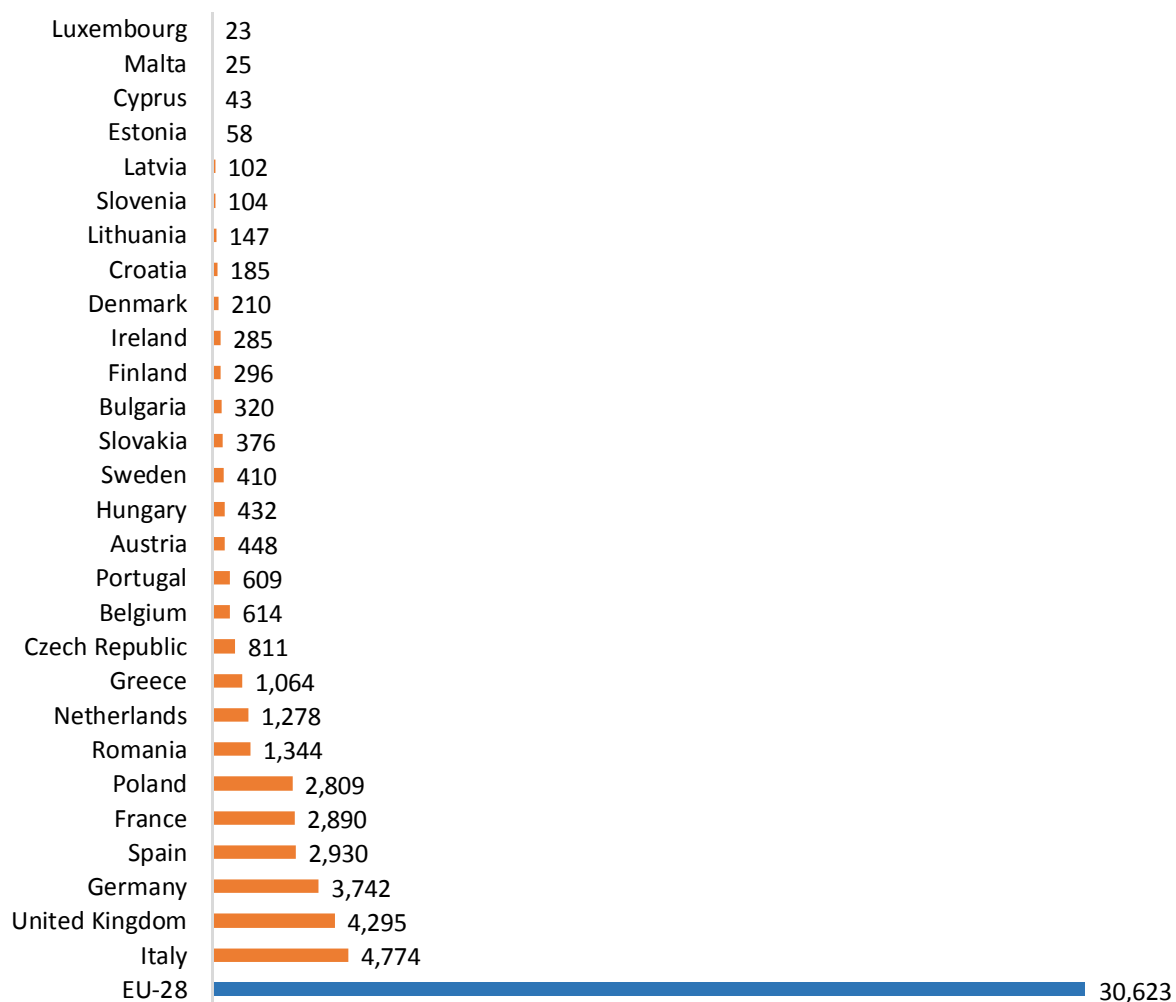
Low-tech industries

- C10 manufacture of food products
- C11 manufacture of beverages
- C12 manufacture of tobacco products
- C13 manufacture of textiles
- C14 manufacture of wearing apparel
- C15 manufacture of leather and related products
- C16 manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
- C17 manufacture of paper and paper products
- C18 printing and reproduction of recorded media

ANNEX 4 DETAILED INFORMATION ON SELF-EMPLOYMENT

I.1. Level of self-employment in the EU-28

Figure 78: Level of self-employment in EU-28 in thousands in 2016



Source: Eurostat

I.2. Challenges in measuring the gig economy

Box 7

Measuring the gig economy

The term 'gig economy' loosely refers to an economy in which work arrangements are characterised by short-term contracts, temporary positions and contingent work paid on a piece or project basis. A common feature of many of these work models is a reliance on digital intermediary platforms or apps that directly connect self-employed or freelance workers with customers and clients.⁷³ However, a concise definition of the gig economy has proved elusive, and a wide range of different work types and models are currently subsumed within the concept.⁷⁴

Measuring the magnitude and growth of the gig economy poses major challenges, and it is widely recognized both in the research literature as well as among policy makers that existing economic statistics are not well suited to fully capture the extent of the gig economy.⁷⁵

Conventional labour market indicators that are often used to provide an indication of the size of the gig economy are the **number of self-employed persons**, the **number of freelancers**, the **number of (self-employed) part-time workers**, and the **number of people holding more than one job**.⁷⁶

There are several problems associated with the use of these traditional indicators for measuring the gig economy. Most importantly, the ad hoc and temporary nature of work in parts of the gig economy, as well as the lack of clear definitions, might lead to significant under-reporting in the number of self-employed in the gig economy.

It has been further noted that because the gig economy is both fairly recent and also concentrated in certain sectors and big cities, it is unlikely to show up as yet in the responses to conventional labour market surveys.⁷⁷ For example, it is presumed that people who are undertaking small and occasional gig economy work do not report that they are self-employed or have multiple jobs when answering the surveys. Moreover, the numbers observed also embody the effects of changes in the economic, institutional and legal framework conditions. For example, an increase in the number of self-employed persons might be due to fewer people exiting self-employment, rather than to more people entering self-employment high level aggregate statistics⁷⁸. Therefore for occupations which have historically relied on freelancers, such as managers, professionals and associate and technical staff, it is preferable to view the self-employment indicators at a more disaggregated level.

Other existing economic statistics that have been used to quantify the gig economy are the number of 'non-employer' firms (solo self-employed) and the number of micro-businesses in the economy, as there is some evidence that digital platforms are increasingly shaping micro-business development⁷⁹. Researchers have also looked at tax returns, particularly in the US, where employers must file a tax return each time they engage a freelancer or contingent worker.⁸⁰

In addition to the conventional labour market indicators and other existing economic statistics discussed above, new economic indicators have been developed to further pin down the gig economy. One approach has been to directly survey users of crowdwork platforms⁸¹ to enquire about the proportion of income from 'crowdwork'⁸². However, these surveys are often relatively small and hence less representative. Researchers at the Oxford Internet Institute⁸³ have developed the Online Labour Index

⁷³ House of Commons Work and Pensions Committee (2017).

⁷⁴ Brinkley (2016).

⁷⁵ Kässi & Lehdonvirta (2016).

⁷⁶ Brinkley (2016); Eichhorst et al. (2016); Abraham et al. (2016).

⁷⁷ Brinkley (2016); Eichhorst et al. (2016).

⁷⁸ Ian Hathaway (2015).

⁷⁹ Brinkley (2016).

⁸⁰ Brinkley (2016); Abraham et al. (2016).

⁸¹ Crowdwork platforms are websites that recruit people to undertake mainly low-level repetitive tasks such as data entry, ranking URLs on Google, transcribing recordings or tagging photographs.

⁸² Huws & Joyce (2016).

⁸³ Kässi & Lehdonvirta (2016).

(OLI), which measures the utilisation of online labour across countries and occupations by tracking the number of projects and tasks posted on online labour platforms in near-real time. Similarly, the McKinsey Global Institute have looked at the number of providers registered on digital platform websites. Whilst these indicators are more tailored to the characteristics of the gig economy, they are problematic because workers may be registered with several platforms and work with several companies in the same month, week or even day, and because it is not possible to single out active participants.⁸⁴

⁸⁴ Brinkley (2016); De Stefano (2016).

1.3. Co-movements in total employment and self-employment in the EU-28 and selected non-EU countries

In the countries where both employment and self-employment increased over the period 2009 to 2016 (Australia, Canada, New Zealand and Switzerland), the change in the level of self-employment accounts for between 4 % (Switzerland) and 28 % (New Zealand) of the total increase in employment.

In the two geographical areas where self-employment shows a decrease from 2009 to 2016 (EU-28 and the United States), total employment increased.

Moreover, the data on annual changes in employment and self-employment reported in Table 13 show that none of the comparator countries exhibit identical trends in the direction of change of total employment (as per the sign shown in the row 'change in employment') and in the direction of change of self-employment (as per the sign shown in the row 'change in self-employment'). In many instances, total employment and self-employment move in opposite directions.

Table 13: Annual changes in self-employment and employment in the EU-28 and selected non-EU countries, 2010- 2016

Country	Employment indicator	2000-2008	2009-2016	2008	2009	2010	2011	2012	2013	2014	2015	2016
Australia	Share of change in self-employment in total employment change	12%	6%	15%	24%	23%				58%	13%	18%
	Change in employment	+	+	+	+	+	+	+	+	+	+	+
	Change in self-employment	+	+	+	+	+	-	-	-	+	+	+
Japan	Share of change in self-employment in total employment change									8%		
	Change in employment	-	+	-	-	-	-	+	+	+	+	+
	Change in self-employment								-	+	-	-
EU-28	Share of change in self-employment in total employment change	11%	4%		8%				54%	12%		4%
	Change in employment	+	+	+	-	-	+	-	-	+	+	+
	Change in self-employment	+	+	-	-	+	-	+	-	+	-	+
Canada	Share of change in self-employment in total employment change	13%	5%	22%				7%	20%		25%	5%
	Change in	+	+	+	-	+	+	+	+	+	+	+

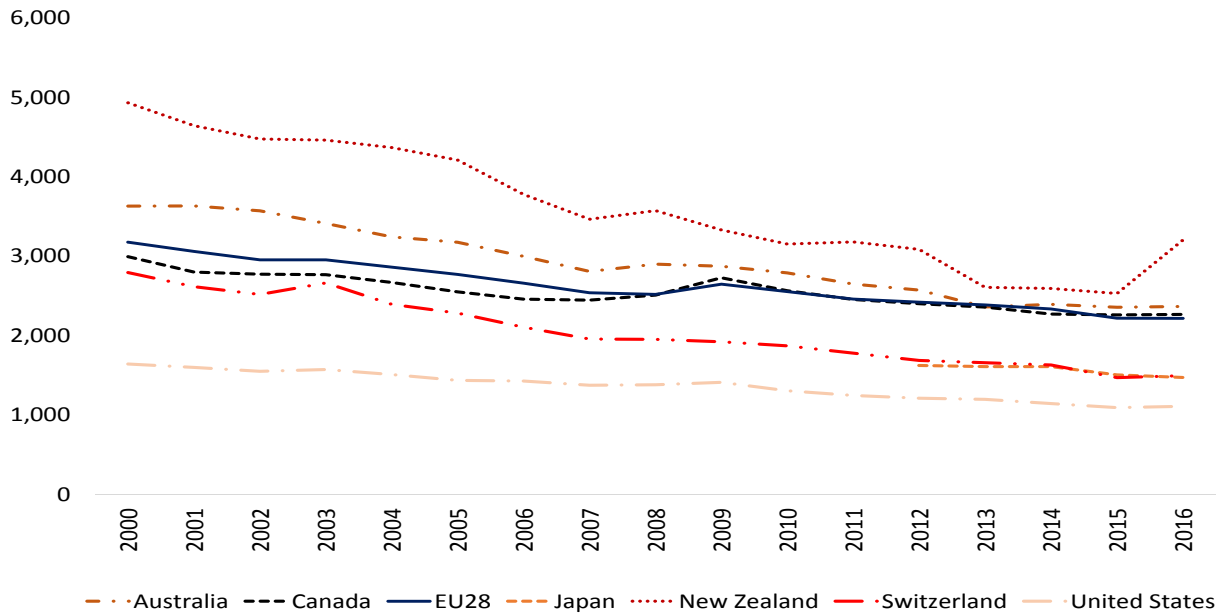
	employment											
	Change in self-employment	+	+	+	+	-	-	+	+	-	+	+
New Zealand	Share of change in self-employment in total employment change		28%	86%	83%		55%	80%		14%		84%
	Change in employment	+	+	+	-	+	+	-	+	+	+	+
	Change in self-employment	-	+	+	-	-	+	-	-	+	-	+
Switzerland	Share of change in self-employment in total employment change		4%	19%		115%	7%	10%	8%	7%		10%
	Change in employment	+	+	+	+	+	+	+	+	+	+	+
	Change in self-employment	-	+	+	-	+	+	+	+	+	-	+
United States	Share of change in self-employment in total employment change	14%		42%	10%	52%		8%		3%	8%	10%
	Change in employment	+	+	-	-	-	+	+	+	+	+	+
	Change in self-employment	+	-	-	-	-	-	+	-	+	+	+

Source: Eurostat, ILO, US Bureau of Labor Statistics

Note: EU-28 estimates are sourced from Eurostat, based on annual data up to 2016. Estimates for all other countries are sourced from own account workers, employer and employment information from the ILO. To account for any discrepancies in ILO estimates across countries, incorporated self-employment from the US Bureau of Labor Statistics was used to adjust ILO estimates. ILO and Eurostat data is based on 15+ year olds, and incorporated US self-employment from the US Bureau of Labor Statistics is based on 16+ year olds. The share of the change in self-employment in the change in total employment has only been provided in the table if both changes are either positive or negative.

I.4. Self-employment individuals per billion of GDP in the EU-28 and selected non-EU countries

Figure 79: Number of self-employment individuals per billion of GDP in the EU-28 and selected non-EU countries, 2010- 2016



Source: Eurostat, ILO, US Bureau of Labor Statistics

Note: GDP measured in Purchasing Power Standard (PPS) current prices. EU-28 estimates are sourced from Eurostat, based on annual data up to 2016. Estimates for all other countries are sourced from own account workers, employer and employment information from the ILO. To account for any discrepancies in ILO estimates across countries, incorporated self-employment from the US Bureau of Labor Statistics was used to adjust ILO estimates. ILO and Eurostat data is based on 15+ year olds and incorporated US self-employment from the Bureau of Labor Statistics is based on 16+ year olds.

I.5. Changes in the ratio of the female self-employment rate to the male self-employment rate from 2000 to 2016

Table 14: Ratio of female self-employment rate to male self-employment rate – 2000 to 2016

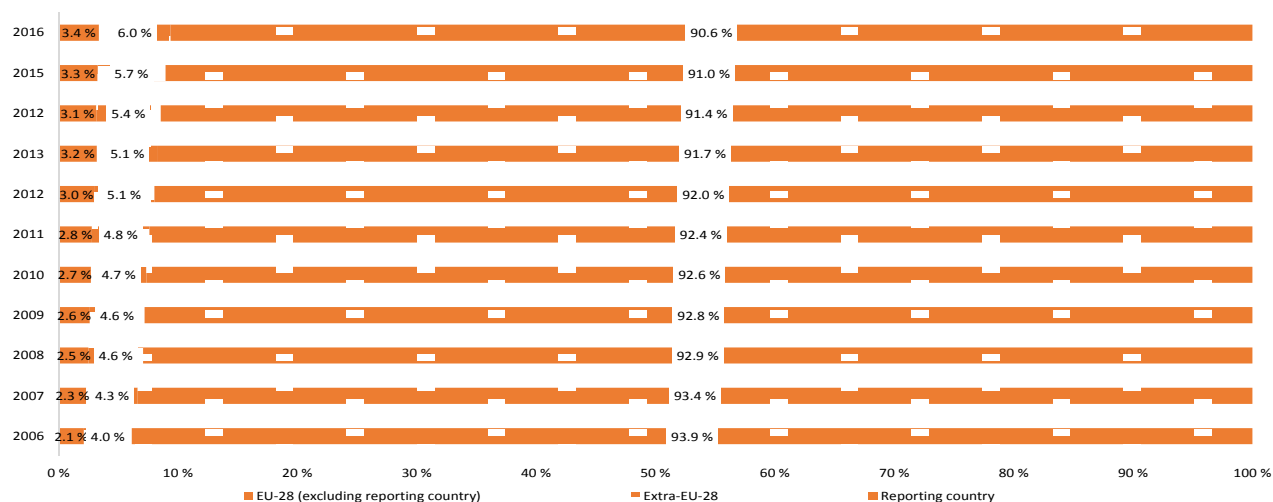
Country	Ratio of the female self-employment rate to the male self-employment rate in 2000 (Female SE rate/ Male SE rate)	Ratio of the female self-employment rate to the male self-employment rate in 2008 (Female SE rate/ Male SE rate)	Ratio of the female self-employment rate to the male SE rate in 2016 (Female SE rate/ Male SE rate)	Change in the ratio of female self-employment rate to the male self-employment rate between 2000 and 2008 (Ratio in 2008 minus ratio in 2000)	Change in the ratio of female self-employment rate to the male self-employment rate between 2008 and 2016 (Ratio in 2016 minus ratio in 2008)	Change in the ratio of the female self-employment rate to the male self-employment rate between 2000 and 2016 (Ratio in 2016 minus ratio in 2000)
Austria	0.66	0.62	0.61	-0.04	- 0.01	- 0.05
Belgium	0.56	0.52	0.53	-0.04	0.01	- 0.03
Bulgaria	0.57	0.59	0.58	0.02	- 0.01	0.01
Croatia	0.59	0.69	0.54	0.11	- 0.15	- 0.05
Cyprus	0.35	0.42	0.55	0.07	0.14	0.20
Czech Republic	0.48	0.48	0.61	-0.00	0.13	0.13
Denmark	0.33	0.38	0.48	0.05	0.10	0.15
EU-28	0.53	0.53	0.56	0.01	0.03	0.03
Estonia	0.62	0.46	0.55	-0.16	0.10	- 0.06
Finland	0.49	0.51	0.50	0.02	- 0.01	0.01
France	0.43	0.48	0.52	0.05	0.04	0.09
Germany	0.50	0.55	0.58	0.05	0.03	0.07
Greece	0.57	0.61	0.67	0.04	0.06	0.10
Hungary	0.51	0.54	0.62	0.03	0.08	0.11
Ireland	0.29	0.28	0.33	-0.01	0.05	0.04
Italy	0.56	0.60	0.62	0.04	0.01	0.06
Latvia	0.64	0.53	0.61	-0.11	0.07	- 0.04
Lithuania	0.62	0.52	0.57	-0.10	0.05	- 0.06
Luxembourg	0.59	0.87	0.73	0.28	- 0.14	0.14
Malta	0.38	0.35	0.33	-0.03	- 0.03	- 0.05
Netherlands	0.64	0.60	0.65	-0.03	0.05	0.01
Poland	0.70	0.65	0.58	-0.05	- 0.07	- 0.12
Portugal	0.81	0.83	0.62	0.03	- 0.21	- 0.19
Romania	0.50	0.47	0.48	-0.02	0.01	- 0.02
Slovakia	0.38	0.41	0.54	0.03	0.13	0.16
Slovenia	0.42	0.43	0.49	0.01	0.06	0.07
Spain	0.62	0.58	0.60	-0.04	0.02	- 0.02
Sweden	0.37	0.40	0.45	0.03	0.05	0.08
United Kingdom	0.46	0.44	0.55	-0.02	0.11	0.09

Source: Eurostat

Note: Cells in green identify decreases in the self-employment rate of females to the self-employment rate of males, and cells in red borwn identtity an opposite movement

I.6. Self-employment by country of birth

Figure 80: Self-employed borne outside the country of residence in % of total self-employment in 2016



Source: Eurostat

Note: Estimates based on available data at Member State level for 15-64 year olds. Countries not shown in the figure have missing data in the database.

Table 15: Ratio of share of self-employed borne outside the country of residence, 2006-2016

	EU28 (excluding reporting country)	Extra-EU28	Reporting country
Austria	1.29	1.33	0.96
Belgium	1.43	1.37	0.94
Bulgaria			
Croatia			
Cyprus	1.76	1.79	0.90
Czech Republic	1.13	1.95	0.98
Denmark	1.85	2.05	0.93
Estonia			
Finland	1.46	2.14	0.97
France	1.15	1.18	0.98
Greece	0.99	1.25	0.99
Hungary	0.81	1.47	1.00
Ireland	1.41	2.63	0.93
Italy	1.41	1.65	0.96
Latvia			
Lithuania			
Luxembourg	1.30	1.69	0.77
Malta	1.49	1.34	0.97
Netherlands	0.94	1.06	1.00
Poland			

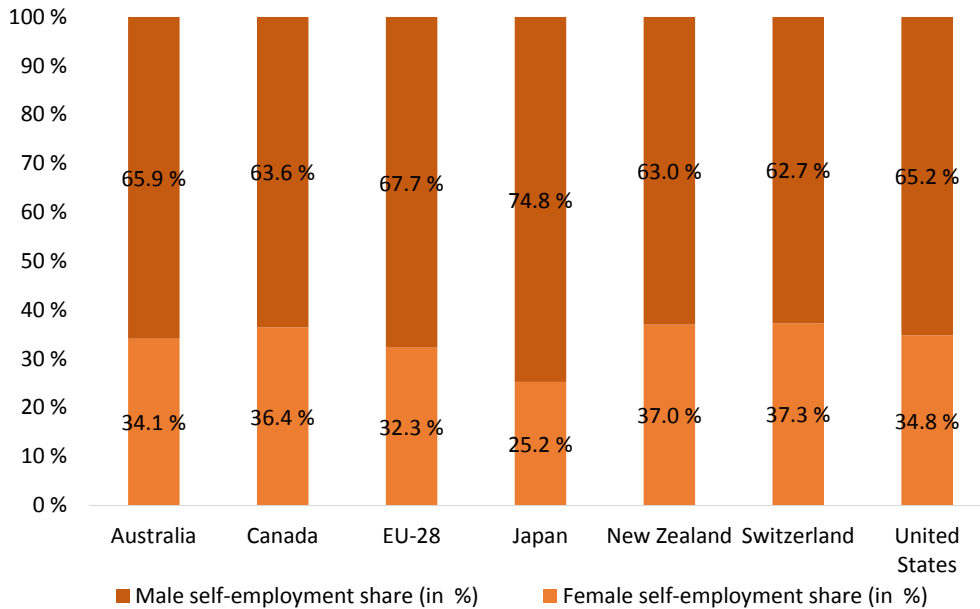
Portugal	2.26	1.79	0.95
Romania			
Slovakia			
Slovenia	0.85	2.32	0.96
Spain	1.49	1.60	0.95
Sweden	1.32	1.34	0.95
United Kingdom	2.07	1.40	0.91

Source: Eurostat

Note: Estimates based on available data at Member State level for 15-64 year olds. Data are missing for countries with no numbers in the table. The orange shading highlights cases where the share has increased been 2006 and 2016.

I.7. Shares of self-employment by gender in the EU-28 and selected non-EU countries

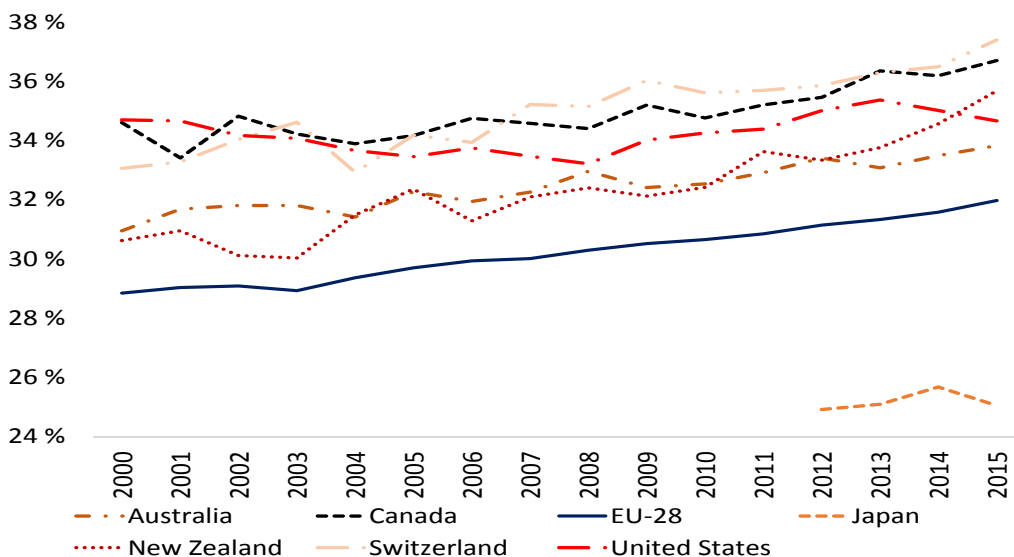
Figure 81: Self-employment by gender (in % of total self-employment) in the EU-28 and selected non-EU countries, 2016



Source: Eurostat, ILO, US Bureau of Labor Statistics

Note: EU-28 estimates are sourced from Eurostat, based on annual data up to 2016. Estimates for all other countries are sourced from own account workers, employer and employment information from the ILO. To account for any discrepancies in ILO estimates across countries, incorporated self-employment from the US Bureau of Labor Statistics was used to adjust ILO estimates. ILO and Eurostat data is based on 15+ year olds, and incorporated US self-employment from the US Bureau of Labor Statistics is based on 16+ year olds.

Figure 82: Female self-employment share (in %) in the EU-28 and selected non-EU countries, 2000-2016

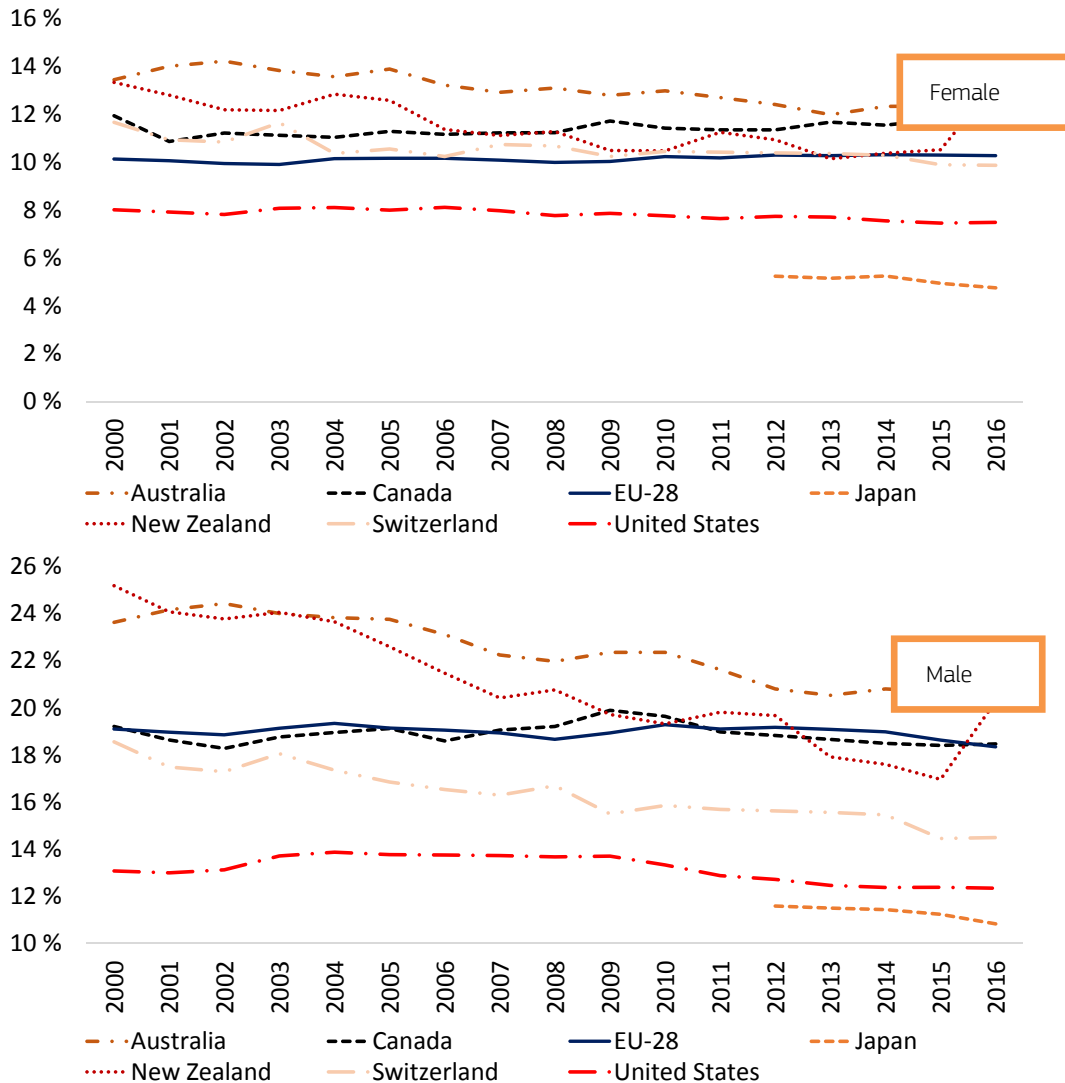


Source: Eurostat, ILO, US Bureau of Labor Statistics

Note: EU-28 estimates are sourced from Eurostat, based on annual data up to 2016. Estimates for all other countries are sourced from own account workers, employer and employment information from the ILO. To account for any discrepancies in ILO estimates across countries, incorporated self-employment from the US Bureau of Labor Statistics was used to adjust ILO estimates. ILO and Eurostat data is based on 15+ year olds, and incorporated US self-employment from the US Bureau of Labor Statistics is based on 16+ year olds.

I.8. Self-employment rates by gender in the EU-28 and selected non-EU countries

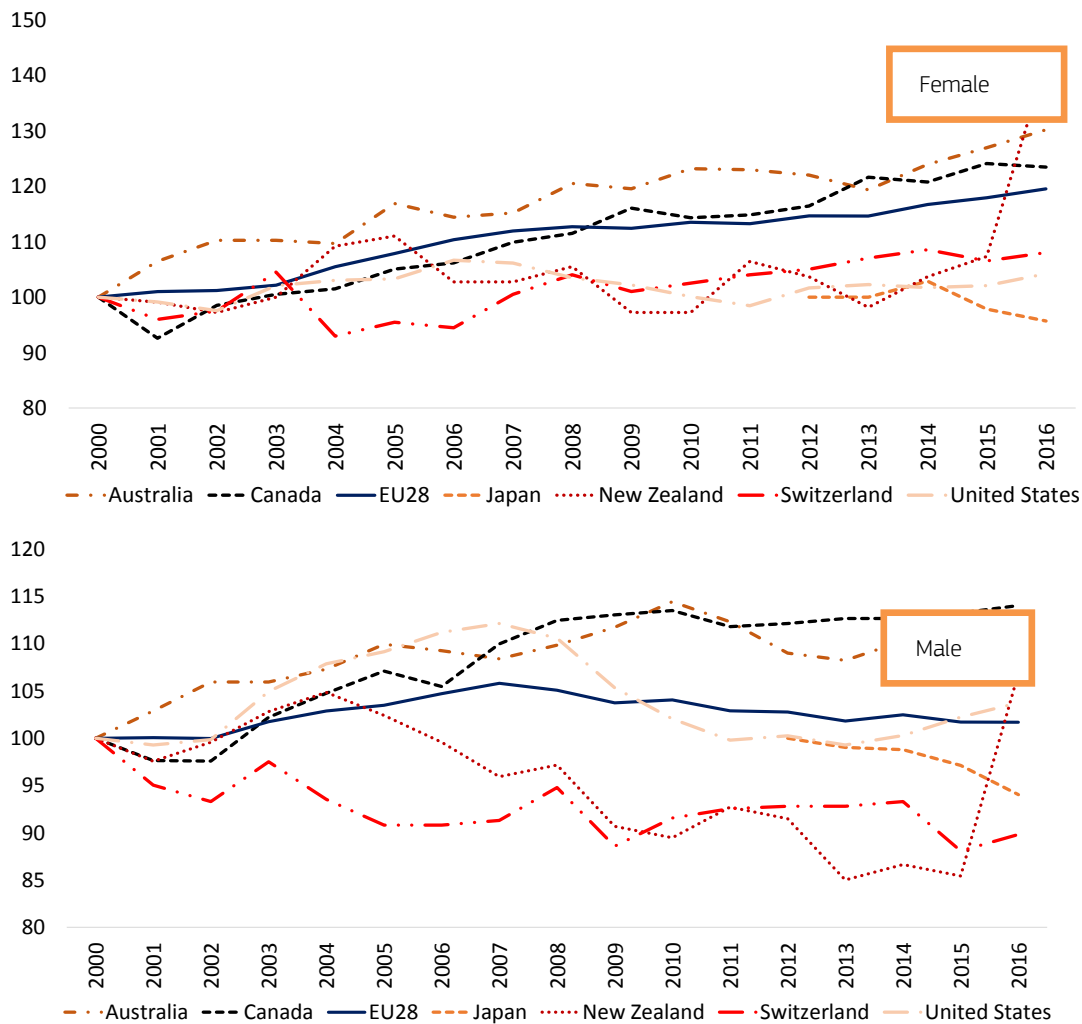
Figure 83: Female and male self-employment rate (in %) in the EU-28 and selected non-EU countries, 2000-2016



Source: Eurostat, ILO, US Bureau of Labor Statistics

Note: EU-28 estimates are sourced from Eurostat, based on annual data up to 2016. Estimates for all other countries are sourced from own account workers, employer and employment information from the ILO. To account for any discrepancies in ILO estimates across countries, incorporated self-employment from the US Bureau of Labor Statistics was used to adjust ILO estimates. ILO and Eurostat data is based on 15+ year olds, and incorporated US self-employment from the US Bureau of Labor Statistics is based on 16+ year olds.

Figure 84: Indexed (2000=100) female and male self-employment levels in the EU-28 and selected non-EU countries, 2000-2016

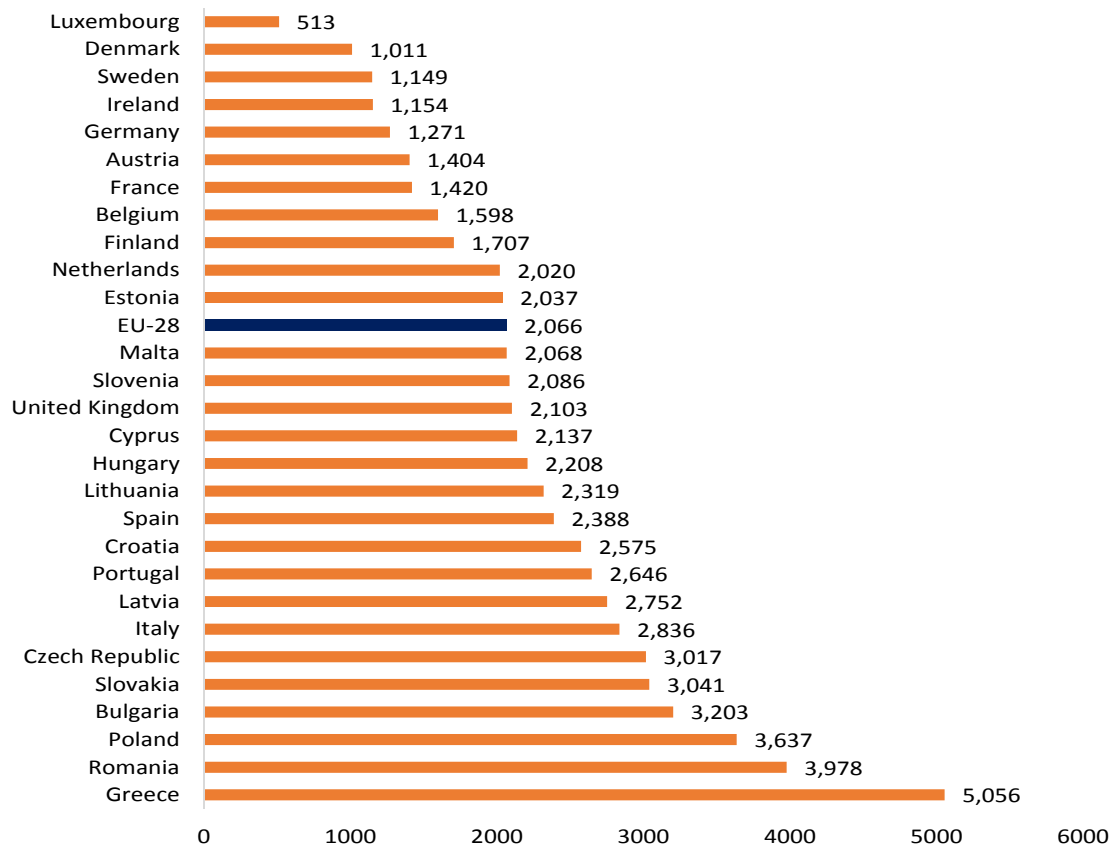


Source: Eurostat, ILO, US Bureau of Labor Statistics

Note: EU-28 estimates are sourced from Eurostat, based on annual data up to 2016. Estimates for all other countries are sourced from own account workers, employer and employment information from the ILO. To account for any discrepancies in ILO estimates across countries, incorporated self-employment from the US Bureau of Labor Statistics was used to adjust ILO estimates. ILO and Eurostat data is based on 15+ year olds, and incorporated US self-employment from the US Bureau of Labor Statistics is based on 16+ year olds.

I.9. Importance of self-employment in EU-28 Member States

Figure 85: Self-employment levels per billion of GDP (in euros) in 2016



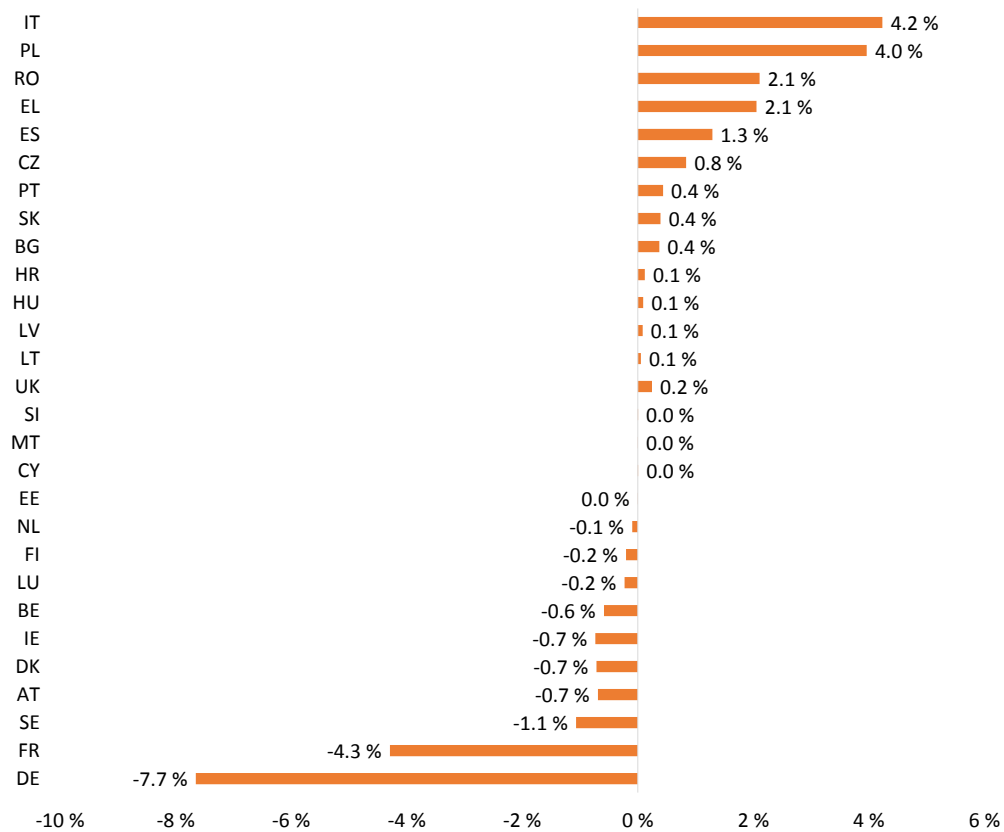
Source: Eurostat

Note: GDP measured in current prices in 2015. Self-employment estimates based on available data at Member State level for 15-64 year olds.

As shown in the figure below, the level of self-employment is particularly high relative to GDP in EL, ES, IT, PL and RO where the share of each Member State in total EU-28 self-employment is over one percent higher than the country's corresponding GDP share.

Conversely, self-employment is particularly low relative to GDP in DE, FR and SE. Their respective share of total EU-28 self-employment is over one percent lower than the GDP share. The gap is particularly striking in the case of DE where the EU-28 share in self-employment is 7.7 % of the share in EU GDP.

Figure 86: Difference (in percentage points) between a Member State's share of EU-28 self-employment and its share of EU-28 GDP - 2016

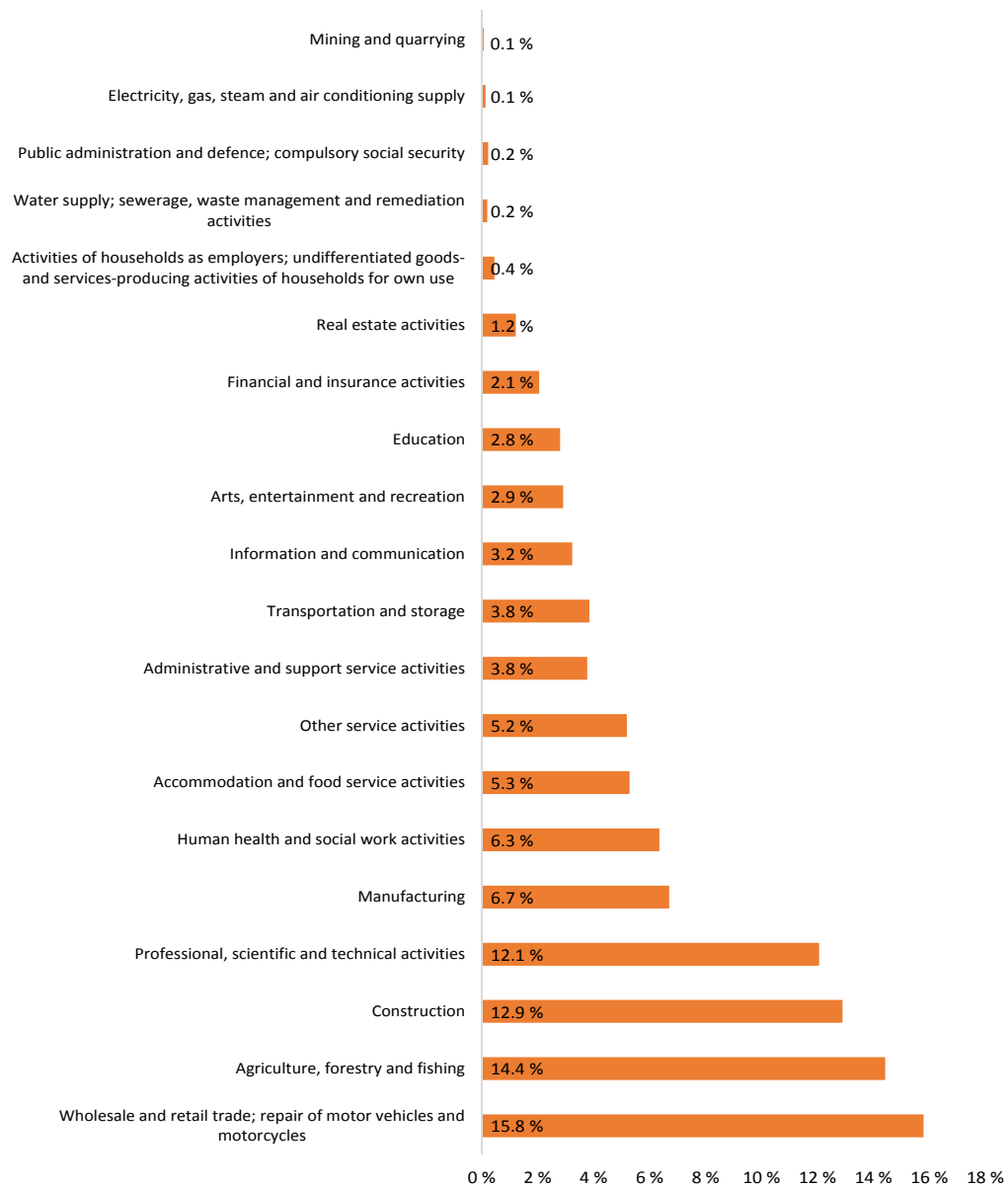


Source: Eurostat

Note: Estimates based on available data at Member State level for 15-64 year olds

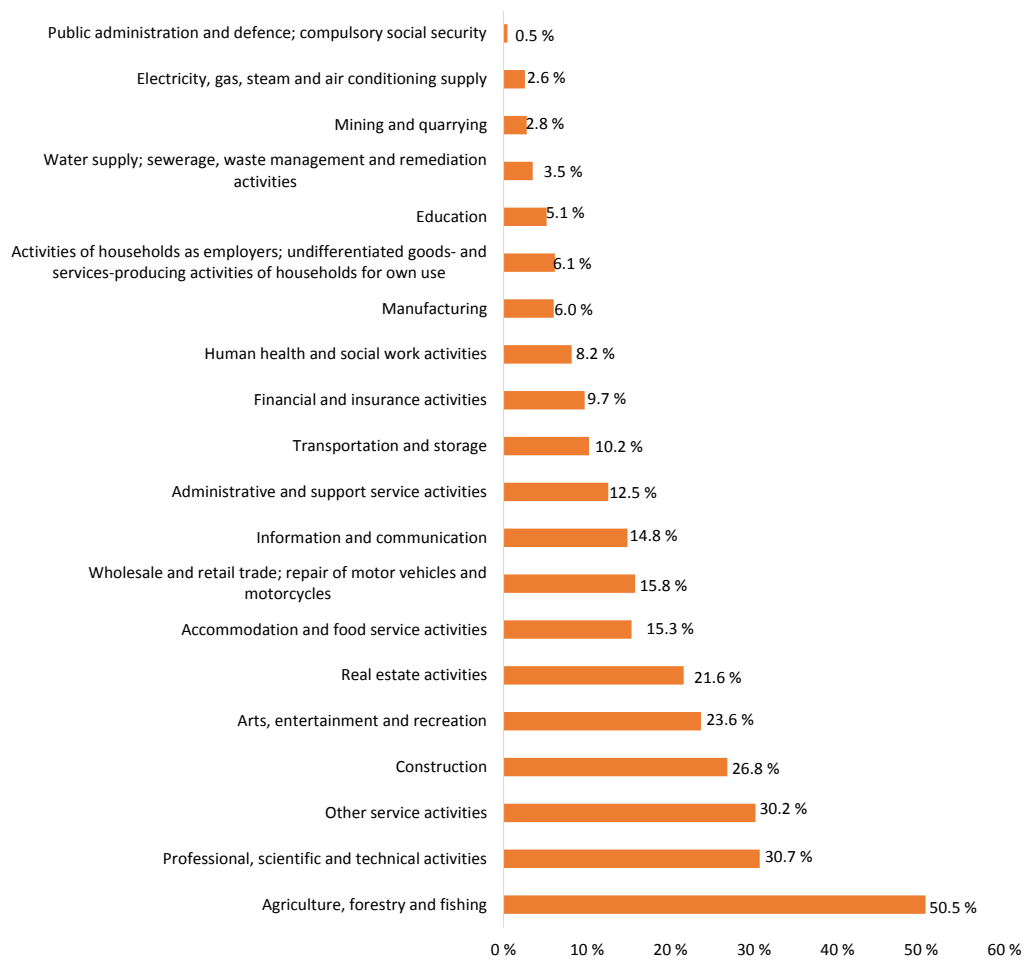
I.10. Self-employment in different EU-28 industries

Figure 87: Shares of self-employment (in %) by industry in the EU-28 - 2016



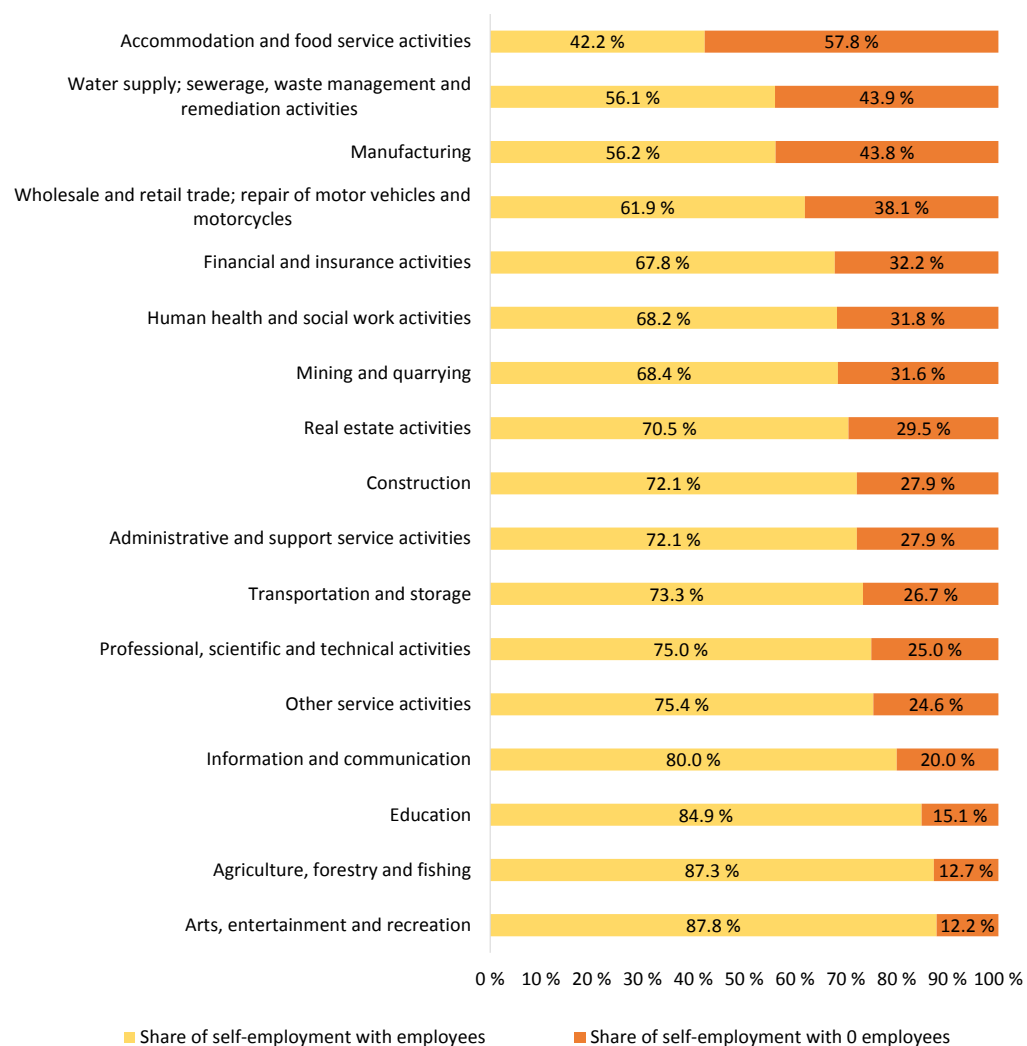
Source: Eurostat

Note: Estimates for 2016 are presented for 16-64 year olds

Figure 88: Self-employment rate by industry in the EU-28, 2016

Source: Eurostat

Figure 89: Self-employment with 0 employees and with employees by sector (in % percent of total self-employment in the sector) in the EU-28 in 2016



Source: Eurostat

Note: Shares are based on the relative size of the splits provided by Eurostat, rather than on shares of the total, to ensure that the shares always sum to 100 %.

Table 16: Share of self-employment (in %) by Member State and industry, 2016

Industry NACE 2	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Austria	22 %		6 %			8 %	13 %	3 %	8 %	5 %	2 %	2 %	12 %	2 %		2 %	7 %	4 %	5 %	
Belgium	5 %		5 %			16 %	17 %	2 %	7 %	4 %	3 %	2 %	15 %	4 %		1 %	12 %	2 %	5 %	
Bulgaria	22 %		7 %			8 %	26 %	6 %	5 %	2 %			8 %	1 %			4 %	3 %	5 %	
Croatia	31 %		8 %			9 %	11 %	5 %	7 %	1 %		1 %	12 %	2 %		1 %	4 %		7 %	
Cyprus	10 %		5 %			14 %	14 %	4 %	6 %		3 %		9 %	7 %		9 %	4 %	3 %	10 %	
Czech Republic	4 %		12 %	0 %	0 %	19 %	15 %	3 %	4 %	4 %	4 %	2 %	13 %	3 %	0 %	2 %	2 %	3 %	6 %	4 %
Denmark	9 %		5 %			11 %	13 %	4 %	4 %	7 %		1 %	15 %	5 %		3 %	9 %	3 %	6 %	
Estonia	10 %		11 %			17 %	14 %	8 %		6 %		4 %	9 %				3 %	2 %	9 %	
Finland	16 %		7 %			14 %	10 %	6 %	4 %	3 %	1 %	1 %	12 %	5 %		1 %	7 %	5 %	7 %	
France	14 %		5 %			13 %	15 %	3 %	6 %	3 %	1 %	2 %	11 %	3 %		2 %	12 %	3 %	6 %	
Germany	5 %		7 %		0 %	12 %	13 %	2 %	5 %	5 %	4 %	1 %	14 %	6 %		4 %	11 %	4 %	6 %	0 %
Greece	30 %	0 %	6 %			5 %	21 %	5 %	8 %	1 %	1 %	0 %	10 %	2 %		2 %	4 %	1 %	3 %	0 %
Hungary	14 %		10 %			12 %	17 %	5 %	5 %	4 %	2 %	1 %	11 %	4 %		1 %	3 %	3 %	8 %	
Ireland	21 %		7 %			16 %	10 %	7 %	4 %	4 %	1 %	1 %	10 %	3 %		2 %	4 %	4 %	4 %	
Italy	7 %		9 %	0 %	0 %	11 %	23 %	2 %	7 %	2 %	2 %	1 %	17 %	3 %	0 %	2 %	5 %	3 %	5 %	0 %
Latvia	26 %		8 %			11 %	14 %	4 %	2 %	2 %		3 %	10 %	2 %		2 %	3 %	4 %	8 %	
Lithuania	28 %		9 %			12 %	20 %	4 %					6 %						8 %	

Luxembourg	6 %					5 %	8 %		3 %	3 %	5 %	3 %	13 %	2 %		7 %	16 %		6 %	
Malta	6 %		10 %			15 %	29 %	5 %	6 %	2 %		2 %	9 %	2 %		2 %	2 %	3 %	5 %	
Netherlands	7 %		4 %			9 %	13 %	2 %	4 %	5 %	3 %	1 %	15 %	5 %	0 %	4 %	10 %	5 %	6 %	
Poland	39 %		7 %		0 %	10 %	15 %	5 %	2 %	3 %	2 %	1 %	7 %	1 %		1 %	3 %	1 %	3 %	
Portugal	17 %		10 %			11 %	23 %	2 %	8 %	1 %	1 %	1 %	10 %	2 %		2 %	3 %	2 %	6 %	
Romania	65 %		3 %			13 %	7 %	2 %	0 %	1 %			2 %				1 %	0 %	1 %	3 %
Slovakia	4 %		11 %	1 %		25 %	14 %	4 %	4 %	3 %	3 %	1 %	9 %	2 %		1 %	10 %	2 %	5 %	
Slovenia	15 %		13 %			11 %	14 %	5 %	5 %	4 %			16 %	2 %		2 %	2 %	4 %	4 %	
Spain	9 %	0 %	8 %	0 %	0 %	11 %	24 %	6 %	10 %	2 %	1 %	1 %	11 %	3 %		2 %	3 %	2 %	6 %	
Sweden	10 %		5 %			14 %	14 %	4 %	5 %	7 %	1 %	2 %	18 %	4 %		2 %	3 %	5 %	6 %	
United Kingdom	3 %	0 %	5 %	0 %	0 %	21 %	8 %	6 %	3 %	5 %	2 %	1 %	12 %	7 %	1 %	6 %	7 %	4 %	6 %	1 %
EU-28	14 %	0 %	7 %	0 %	0 %	13 %	16 %	4 %	5 %	3 %	2 %	1 %	12 %	4 %	0 %	3 %	6 %	3 %	5 %	0 %

Source: Eurostat

Table 17: Self-employment rate (in %) by Member State and industry, 2016

Industry NACE 2	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Austria	61 %		4 %			10 %	10 %	7 %	14 %	16 %	6 %	18 %	24 %	8 %		3 %	8 %	23 %	18 %	
Belgium	64 %		5 %			29 %	17 %	5 %	28 %	18 %	11 %	31 %	40 %	8 %		1 %	11 %	20 %	33 %	
Bulgaria	37 %		4 %			13 %	16 %	11 %	10 %	6 %			25 %	4 %			7 %	19 %	29 %	
Croatia	54 %		6 %			14 %	9 %	10 %	11 %	5 %		34 %	31 %	8 %		1 %	6 %		31 %	
Cyprus	37 %		8 %			20 %	9 %	12 %	8 %		6 %		17 %	30 %		14 %	9 %	23 %	41 %	
Czech Republic	25 %		7 %	4 %	4 %	40 %	20 %	8 %	19 %	24 %	26 %	44 %	44 %	17 %	0 %	6 %	6 %	24 %	61 %	84 %
Denmark	30 %		3 %			16 %	7 %	6 %	7 %	12 %		7 %	21 %	11 %		3 %	4 %	9 %	17 %	
Estonia	26 %		5 %			18 %	10 %	10 %		13 %		23 %	23 %				6 %	8 %	36 %	
Finland	59 %		6 %			25 %	11 %	13 %	13 %	9 %	4 %	15 %	24 %	13 %		2 %	5 %	22 %	29 %	
France	56 %		4 %			22 %	13 %	6 %	16 %	11 %	5 %	16 %	21 %	9 %		4 %	9 %	21 %	25 %	
Germany	36 %		3 %		3 %	16 %	9 %	4 %	12 %	14 %	10 %	21 %	23 %	12 %		6 %	8 %	30 %	21 %	7 %
Greece	75 %	11 %	19 %			38 %	35 %	27 %	26 %	9 %	13 %	47 %	53 %	21 %		8 %	19 %	24 %	42 %	9 %
Hungary	29 %		4 %			19 %	14 %	7 %	10 %	16 %	11 %	15 %	33 %	10 %		2 %	4 %	14 %	38 %	
Ireland	67 %		8 %			33 %	10 %	21 %	9 %	13 %	4 %	30 %	24 %	14 %		5 %	5 %	26 %	26 %	
Italy	38 %		10 %	4 %	3 %	38 %	35 %	10 %	25 %	21 %	17 %	52 %	58 %	14 %	0 %	6 %	14 %	39 %	38 %	2 %
Latvia	40 %		7 %			17 %	11 %	5 %	8 %	8 %		13 %	31 %	9 %		2 %	5 %	16 %	40 %	
Lithuania	41 %		7 %			18 %	13 %	6 %					17 %						46 %	
Luxembourg	65 %					7 %	10 %		9 %	9 %	4 %	40 %	17 %	6 %		8 %	14 %		28 %	
Malta	58 %		11 %			33 %	24 %	11 %	11 %	6 %		42 %	25 %	7 %		3 %	3 %	15 %	36 %	
Netherlands	54 %		6 %			31 %	13 %	9 %	16 %	24 %	16 %	18 %	36 %	15 %	1 %	10 %	10 %	39 %	41 %	

Poland	66 %		6 %		5 %	24 %	18 %	14 %	14 %	21 %	12 %	14 %	37 %	9 %		4 %	9 %	11 %	36 %	
Portugal	53 %		8 %			24 %	21 %	8 %	18 %	8 %	7 %	26 %	30 %	8 %		3 %	4 %	20 %	36 %	
Romania	52 %		2 %			26 %	8 %	6 %	3 %	6 %			13 %				3 %	11 %	13 %	71 %
Slovakia	20 %		7 %	9 %		41 %	17 %	9 %	14 %	17 %	28 %	25 %	42 %	11 %		3 %	22 %	22 %	53 %	
Slovenia	41 %		6 %			23 %	13 %	10 %	14 %	13 %			38 %	10 %		3 %	3 %	24 %	30 %	
Spain	35 %	6 %	10 %	2 %	5 %	29 %	24 %	18 %	19 %	13 %	8 %	36 %	35 %	9 %		5 %	6 %	17 %	38 %	
Sweden	52 %		5 %			19 %	10 %	7 %	12 %	14 %	4 %	12 %	18 %	7 %		1 %	2 %	17 %	21 %	
United Kingdom	44 %	9 %	7 %	7 %	4 %	40 %	9 %	17 %	8 %	16 %	8 %	16 %	25 %	21 %	2 %	8 %	7 %	25 %	33 %	45 %
EU-28	51 %	3 %	6 %	3 %	3 %	27 %	16 %	10 %	15 %	15 %	10 %	22 %	31 %	13 %	0 %	5 %	8 %	24 %	30 %	6 %

Source: Eurostat

I.11. Self-employment and education

Table 18: Self-employment by level of education as a % of total self-employment in 2016

Country	Level of education		
	Less than primary, primary and lower secondary education (ISCED11 levels 0-2)	Upper secondary and post-secondary non-tertiary education (ISCED11 levels 3 and 4)	Tertiary education (ISCED11 levels 5-8)
Austria	9 %	46 %	45 %
Belgium	14 %	38 %	48 %
Bulgaria	16 %	52 %	32 %
Croatia	17 %	59 %	23 %
Cyprus	24 %	36 %	40 %
Czech Republic	2 %	73 %	25 %
Denmark	19 %	47 %	34 %
Estonia	5 %	52 %	43 %
Finland	14 %	51 %	34 %
France	13 %	43 %	44 %
Germany	7 %	46 %	48 %
Greece	34 %	40 %	26 %
Hungary	4 %	63 %	33 %
Ireland	22 %	38 %	40 %
Italy	33 %	42 %	25 %
Latvia	8 %	59 %	34 %
Lithuania	4 %	60 %	35 %
Luxembourg	13 %	36 %	51 %
Malta	58 %	26 %	16 %
Netherlands	18 %	41 %	41 %
Poland	7 %	66 %	27 %
Portugal	60 %	18 %	22 %
Romania	42 %	52 %	6 %
Slovakia	2 %	74 %	24 %
Slovenia	7 %	62 %	30 %
Spain	40 %	23 %	37 %
Sweden	16 %	52 %	32 %
United Kingdom	18 %	40 %	42 %
EU-28	21 %	45 %	35 %

Source: Eurostat

Note: ISCED 11 refers to the International Standard Classification of Education from 2011 which is a statistical framework for education maintained by the United Nations Educational, Scientific and Cultural Organisation (UNESCO). Cells with orange shading represent the largest share of self-employment in the Member State. Due to rounding, the sum of the three categories may not be exactly equal to 100.

Table 19: Self-employment rate by level of education in 2016

Country	Level of education		
	Less than primary, primary and lower secondary education (ISCED11 levels 0-2)	Upper secondary and post-secondary non-tertiary education (ISCED11 levels 3 and 4)	Tertiary education (ISCED11 levels 5-8)
Austria	7 %	9 %	14 %
Belgium	11 %	13 %	15 %
Bulgaria	17 %	10 %	11 %
Croatia	21 %	11 %	10 %
Cyprus	18 %	11 %	11 %
Czech Republic	9 %	16 %	17 %
Denmark	7 %	8 %	7 %
Estonia	5 %	10 %	10 %
Finland	17 %	14 %	10 %
France	9 %	10 %	12 %
Germany	5 %	7 %	15 %
Greece	44 %	28 %	22 %
Hungary	4 %	10 %	13 %
Ireland	24 %	15 %	12 %
Italy	22 %	19 %	26 %
Latvia	12 %	13 %	11 %
Lithuania	14 %	13 %	9 %
Luxembourg	6 %	9 %	10 %
Malta	18 %	11 %	8 %
Netherlands	13 %	15 %	18 %
Poland	22 %	19 %	14 %
Portugal	18 %	10 %	11 %
Romania	37 %	14 %	5 %
Slovakia	5 %	16 %	16 %
Slovenia	10 %	13 %	10 %
Spain	19 %	16 %	14 %
Sweden	11 %	10 %	7 %
United Kingdom	16 %	14 %	14 %
EU-28	16 %	13 %	14 %

Source: Eurostat

Note: ISCED 11 refers to the International Standard Classification of Education from 2011 which is a statistical framework for education maintained by the United Nations Educational, Scientific and Cultural Organisation (UNESCO).

I.12. Self-employment by occupation in Member States

Table 20: Self-employment share of various occupations in EU-28 Member States in 2016

Country/ Sector	Armed forces occupations	Clerical support workers	Craft and related trades workers	Elementary occupations	Managers	Plant and machine operators and assemblers	Professionals	Service and sales workers	Skilled agricultural, forestry and fishery workers	Technicians and associate professionals
Austria		1%	12%	2%	6.5%	2%	24%	15%	22%	16%
Belgium		1%	17%	2%	20%	2%	29%	14%	6%	8%
Bulgaria			9%	5%	24%	6%	12%	20%	18%	5%
Croatia		2%	11%	1%	25%	5%	8%	13%	30%	4%
Cyprus		2%	19%	9%	2%	5%	22%	22%	9%	10%
Czech Republic		3%	29%	1%	8%	3%	17%	20%	4%	16%
Denmark		2%	13%	5%	6%	3%	26%	14%	9%	20%
Estonia			14%		40%	6%	12%	10%	7%	7%
Finland		1%	17%	1%	5%	10%	18%	19%	15%	14%
France			17%	1%	11%	3%	22%	18%	15%	12%
Germany		3%	11%	1%	13%	2%	33%	14%	5%	19%
Greece		1%	12%	1%	6%	6%	17%	23%	30%	4%
Hungary		2%	18%	1%	8%	5%	19%	21%	14%	12%
Ireland		2%	17%	3%	17%	6%	18%	9%	21%	7%
Italy		2%	17%	4%	12%	3%	20%	18%	7%	18%
Latvia			13%	6%	25%	3%	13%	10%	21%	8%
Lithuania			18%		12%		11%	19%	27%	8%
Luxembourg		3%	3%	2%	8%		43%	16%	6%	13%
Malta			24%	4%	13%	3%	11%	29%	6%	8%
Netherlands		3%	13%	3%	10%	2%	31%	18%	6%	12%
Poland		1%	12%	1%	9%	4%	13%	13%	38%	8%
Portugal		1%	17%	2%	22%	2%	15%	16%	17%	7%

Romania			13%	15%	4%	2%	3%	6%	56%	1%
Slovakia		1%	28%	3%	10%	6%	12%	22%	3%	15%
Slovenia		1%	16%	3%	23%	5%	19%	9%	13%	9%
Spain		2%	16%	1%	12%	6%	16%	28%	9%	9%
Sweden		2%	16%	2%	11%	7%	25%	13%	8%	16%
United Kingdom		2%	21%	6%	14%	6%	25%	12%	5%	9%
EU-28		2%	16%	3%	12%	4%	21%	17%	14%	12%

Source: Eurostat

Table 21: Self-employment rate (in %) in different occupations in EU-28 Member States in 2016

Country/ Sector	Armed forces occupations	Clerical support workers	Craft and related trades workers	Elementary occupations	Managers	Plant and machine operators and assemblers	Professionals	Service and sales workers	Skilled agricultural, forestry and fishery workers	Technicians and associate professionals
Austria		2%	9%	2%	15%	4%	15%	9%	62%	9%
Belgium		2%	22%	3%	33%	4%	16%	14%	69%	8%
Bulgaria			7%	5%	44%	5%	8%	10%	59%	5%
Croatia		3%	11%	2%	65%	5%	6%	8%	73%	3%
Cyprus		2%	22%	7%	5%	12%	15%	14%	66%	9%
Czech Republic		5%	27%	3%	25%	4%	18%	21%	46%	15%
Denmark		2%	13%	4%	16%	4%	8%	5%	41%	9%
Estonia			9%		31%	4%	6%	8%	46%	6%
Finland		2%	20%	3%	21%	15%	9%	12%	64%	9%
France			20%	1%	17%	4%	14%	13%	51%	7%
Germany		2%	8%	1%	27%	3%	17%	9%	39%	8%
Greece		4%	35%	4%	70%	27%	26%	28%	82%	15%
Hungary		3%	13%	1%	17%	4%	13%	14%	48%	8%
Ireland		2%	26%	5%	31%	17%	12%	6%	77%	8%
Italy		3%	28%	8%	71%	9%	29%	22%	65%	22%
Latvia			12%	6%	32%	3%	8%	8%	60%	7%
Lithuania			14%		15%		5%	15%	59%	9%

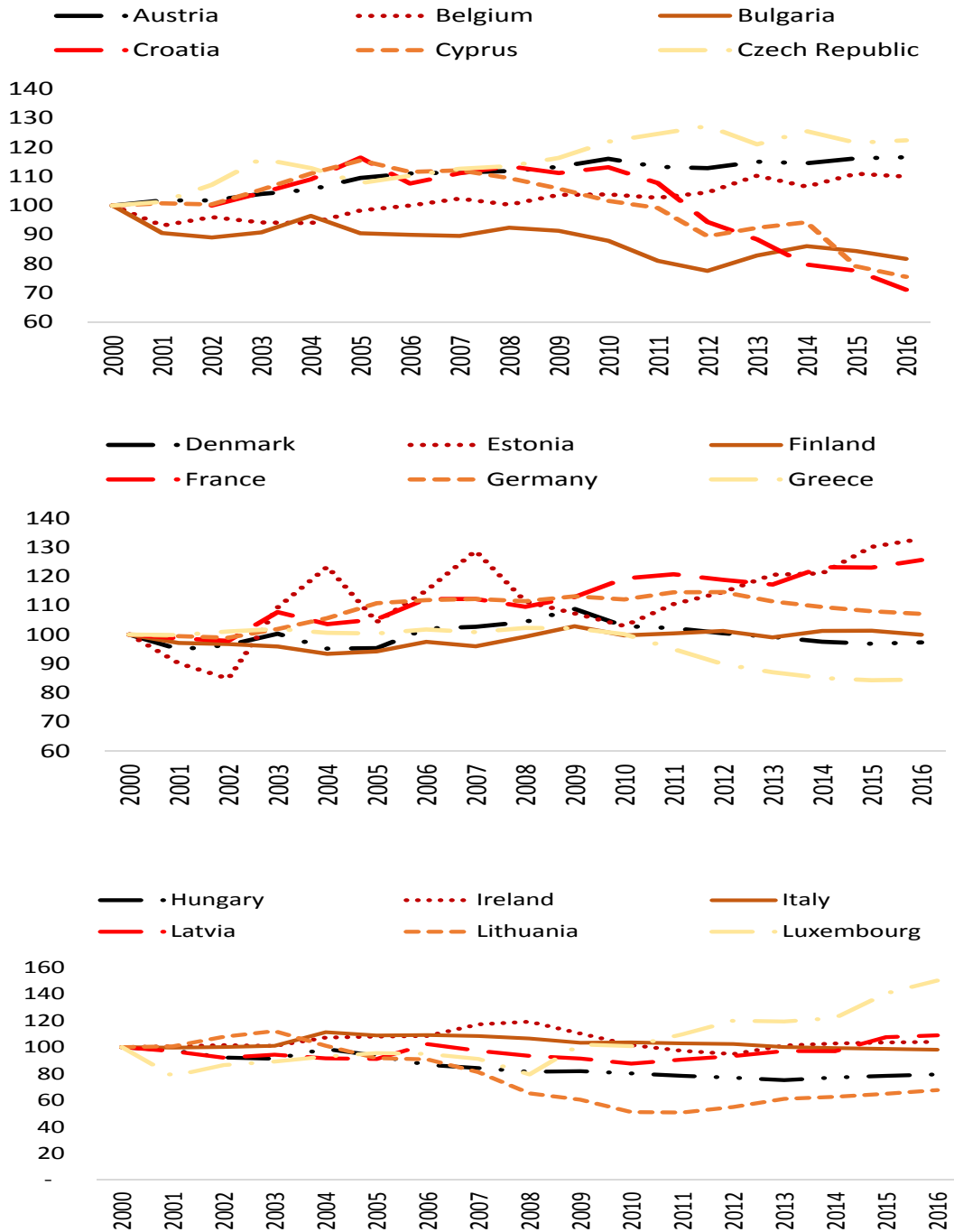
Luxembourg		3%	5%	2%	26%		11%	14%	44%	6%
Malta			33%	6%	19%	7%	9%	18%	61%	8%
Netherlands		5%	24%	6%	26%	9%	19%	15%	50%	12%
Poland		2%	14%	2%	26%	8%	12%	16%	73%	11%
Portugal		1%	18%	3%	49%	4%	11%	13%	60%	8%
Romania			13%	26%	29%	2%	3%	7%	54%	3%
Slovakia		2%	26%	5%	36%	6%	15%	18%	39%	15%
Slovenia		1%	13%	4%	36%	6%	10%	7%	58%	8%
Spain		3%	23%	1%	49%	13%	15%	20%	62%	14%
Sweden		3%	15%	4%	16%	10%	8%	6%	46%	7%
United Kingdom		4%	36%	11%	18%	18%	14%	9%	62%	10%
EU-28		2%	19%	5%	28%	7%	15%	14%	60%	10%

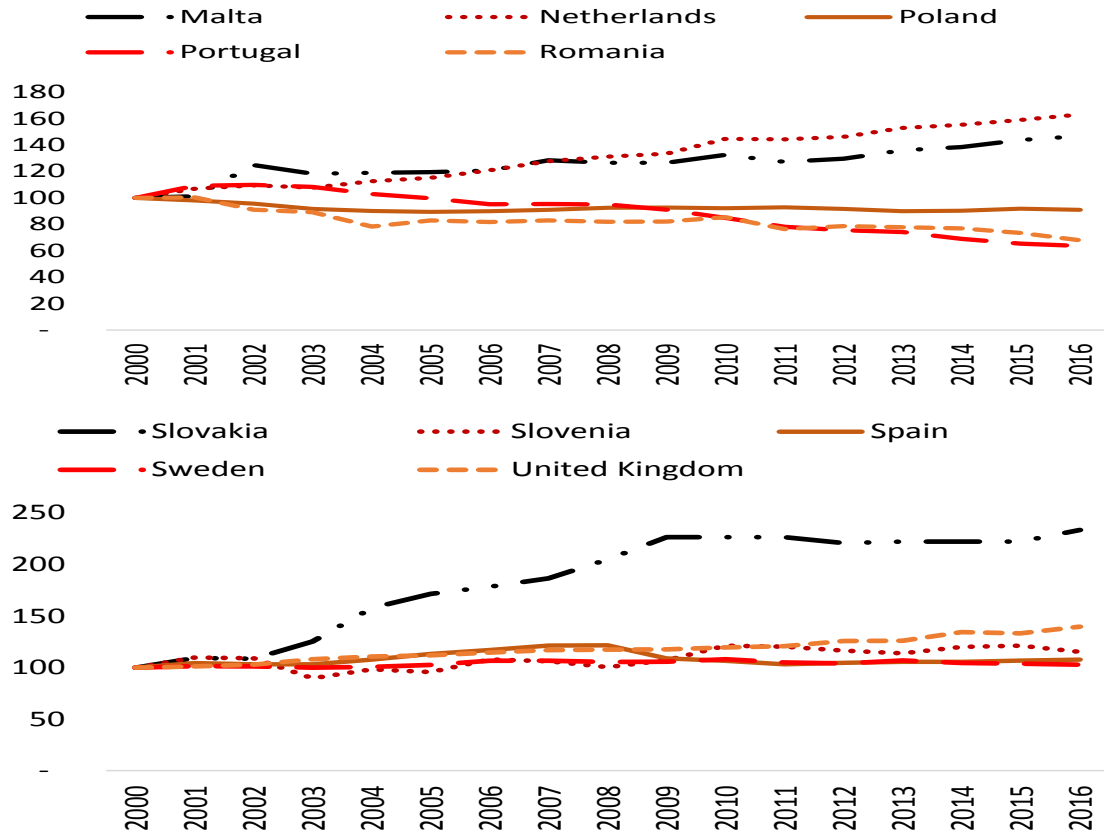
Source: Eurostat

Note: Estimates for 2016 are presented for 16-64 year olds

I.13. Trends in self-employment levels and self-employment rates in EU-28 Member States

Figure 90: Self-employment levels (2000=100) in EU-28 Member States

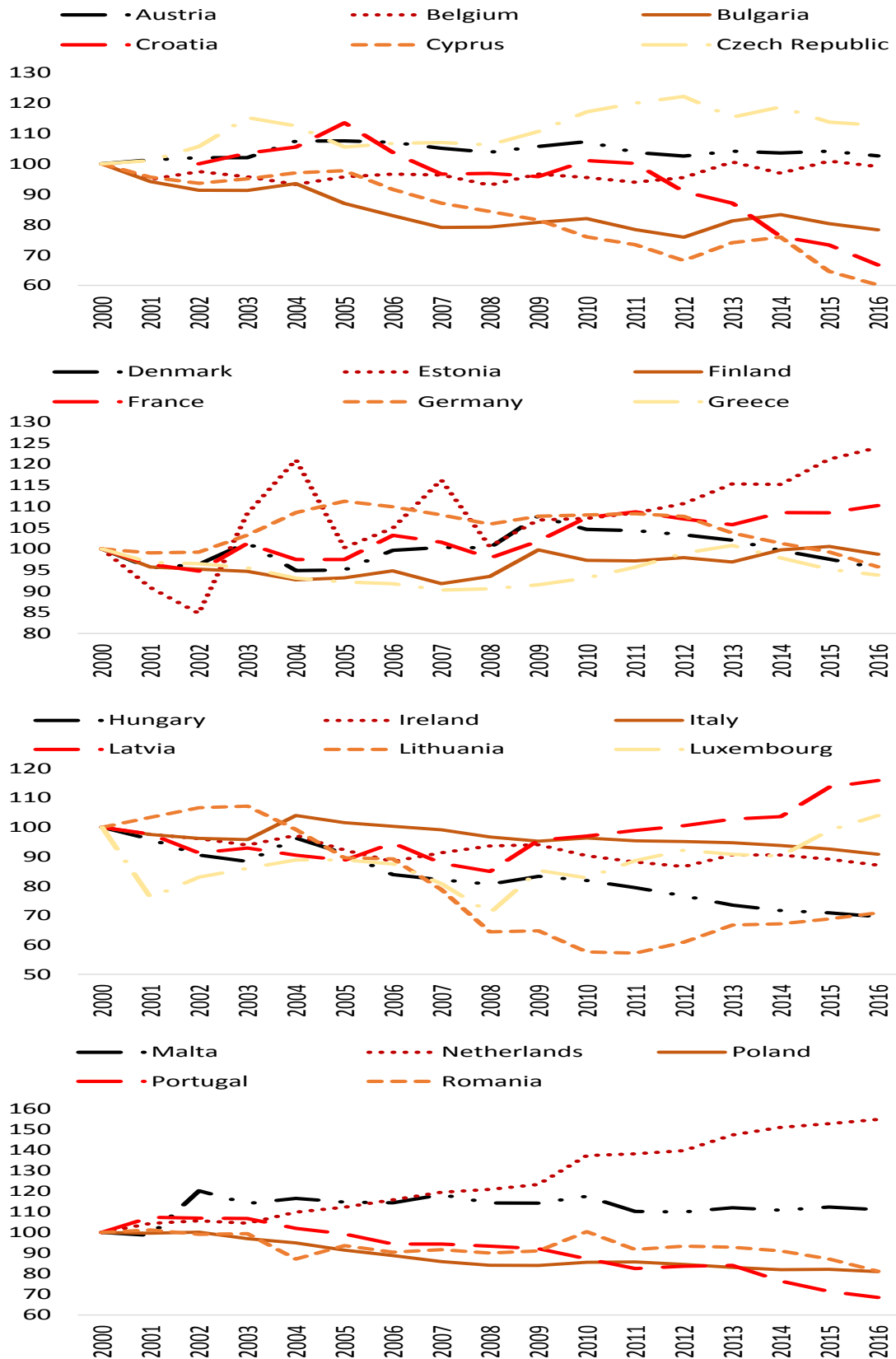


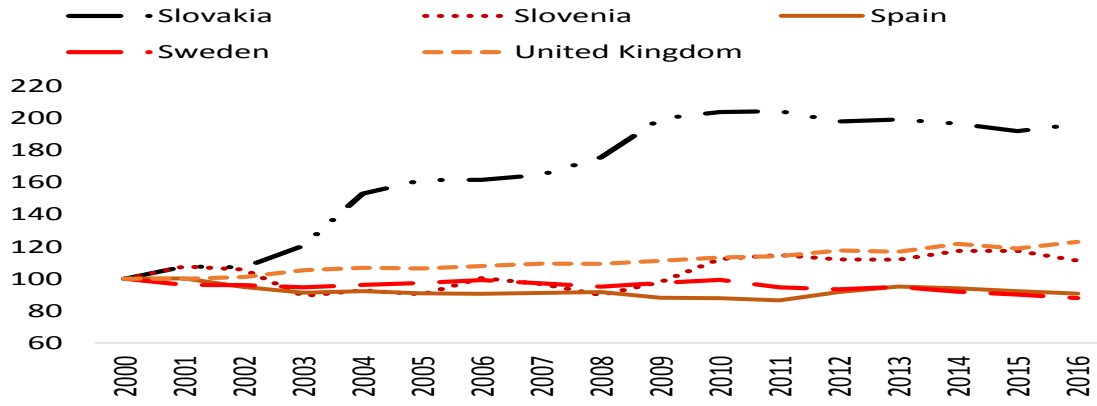


Source: Eurostat

Note: Estimates based on available data at Member State level for 15-64 year olds

Figure 91: Self-employment rate (2000=100) in EU-28 Member States, 2000-2016





Source: Eurostat

Note: Estimates based on available data at Member State level for 15-64 year olds

I.14. Evolution of self-employment rate in agriculture and non-agriculture economy

geo	Sector	new	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Ratio of 2008 to 2000	Ratio of 2016 to 2008	
AT	Agriculture	Level	100	98	95	94	89	93	91	86	87	84	83	79	76	77	76			0.87	0.88	
AT	Total economy excluding ag	Level	100	104	105	106	114	118	121	124	125	128	133	128	130	134	132	136	137		1.30	
AT	Agriculture	Rate	100	102	98	99	109	104	102	92	98	95	92	97	97	94	97	97	97		0.98	
AT	Total economy excluding ag	Rate	100	103	105	107	115	115	116	116	114	118	122	116	116	119	118	120	118		1.04	
BE	Agriculture	Level	100	73	85	93	122	117	119	110		88	88	84	72	95	78	83	83		0.92	
BE	Total economy excluding ag	Level	100	95	97	94	92	97	98	102	101	105	105	104	107	111	109	113	112		1.01	
BE	Agriculture	Rate	100	103	89	103	103	106	112	106	106	105	113	115	110	122	115	125	119		1.06	
BE	Total economy excluding ag	Rate	100	96	98	96	91	94	95	96	93	97	96	95	97	103	98	102	100		0.93	
BG	Agriculture	Level	100	65	71	76	77	63	60	58	58	55	50	48	43	45	45	41	39		0.58	
BG	Total economy excluding ag	Level	100	113	105	104	113	115	116	117	123	123	121	110	108	116	121	122	119		1.23	
BG	Agriculture	Rate	100	92	91	95	94	89	89	89	87	88	86	87	83	83	79	72	70		0.87	
BG	Total economy excluding ag	Rate	100	113	104	102	107	105	101	97	99	102	106	100	99	107	111	109	107		1.08	
CY	Agriculture	Level	100	93	103	99	99	88	75	97	99	79	73	67	48	54	81	69	63		0.64	
CY	Total economy excluding ag	Level	100	102	100	106	113	119	116	114	111	109	105	103	95	97	96	80	77		0.70	
CY	Agriculture	Rate	100	97	98	96	93	92	80	96	111	100	88	78	73	78	76	71	71		0.64	
CY	Total economy excluding ag	Rate	100	96	93	96	98	100	94	88	84	83	77	75	71	76	77	65	61		0.72	
CZ	Agriculture	Level	100	97	97	88	95	96	83	81	81	91	72	92	96	93	80	86	88		0.74	
CZ	Total economy excluding ag	Level	100	102	108	117	114	109	112	115	116	119	124	126	129	134	128	134	124		1.24	
CZ	Agriculture	Rate	100	104	92	109	112	107	109	112	114	114	150	163	154	132	153	147	153		1.34	
CZ	Total economy excluding ag	Rate	100	101	107	116	113	106	107	107	106	111	116	119	121	115	118	113	112		1.06	
DE	Agriculture	Level	100	104	99	96	94	93	88	90	78	74	74	74	71	66	67	64	60		0.77	
DE	Total economy excluding ag	Level	100	99	99	102	107	113	114	114	115	117	116	116	118	119	116	113	112		1.15	
DE	Agriculture	Rate	100	104	105	105	109	104	100	101	112	115	118	116	116	116	117	114	110		1.12	
DE	Total economy excluding ag	Rate	100	99	99	104	109	113	112	110	108	110	110	111	110	106	104	102	98		0.91	
DK	Agriculture	Level	100	91	83	91	87	73	69	71	65	65	62	64	64	63	58	48	44		0.69	
DK	Total economy excluding ag	Level	100	96	100	97	105	109	110	110	110	113	113	111	109	108	109	109	108		0.97	
DK	Agriculture	Rate	100	98	97	105	100	85	82	88	91	91	95	103	97	98	91	73	67		0.81	
DK	Total economy excluding ag	Rate	100	96	99	103	96	100	107	107	108	117	113	112	111	110	108	108	107		0.99	
EE	Agriculture	Level	100	103	99	99	97	87	75	91	73	51	46	59	52	49	47	54	62		0.73	
EE	Total economy excluding ag	Level	100	86	81	112	131	109	127	140	123	124	120	126	133	141	143	153	154		1.25	
EE	Agriculture	Rate	100	104	94	100	119	102	86	110	107	79	76	87	71	70	74	82	94		0.88	
EE	Total economy excluding ag	Rate	100	87	81	111	127	104	114	124	108	120	121	121	126	132	132	138	140		1.08	
EL	Agriculture	Level	100	98	97	98	84	83	82	80	82	86	89	83	82	84	82	79	79		0.82	
EL	Total economy excluding ag	Level	100	101	103	104	109	109	111	111	112	110	105	101	94	89	86	87	87		1.12	
EL	Agriculture	Rate	100	104	106	107	108	109	110	112	115	116	117	120	119	119	122	122	120		1.18	
EL	Total economy excluding ag	Rate	100	96	96	95	95	94	94	93	93	92	93	96	99	99	96	93	92		0.93	
EL	Agriculture	Level	100	100	95	88	88	85	80	76	72	66	63	60	61	62	59	55	57		0.79	
EL	Total economy excluding ag	Level	100	105	105	106	112	119	125	131	132	118	115	112	114	115	115	118	118		1.32	
EL	Agriculture	Rate	100	98	97	91	91	87	85	90	87	83	82	84	86	81	76	75		0.90		
EL	Total economy excluding ag	Rate	100	101	96	93	95	94	95	96	97	93	92	92	101	100	99	97		1.00		
EU28	Agriculture	Level	100	99	97	95	88	87	85	81	78	77	77	72	71	70	69	67	63		0.78	
EU28	Total economy excluding ag	Level	100	101	102	106	111	114	114	116	117	116	117	116	117	118	118	119	119		1.18	
EU28	Agriculture	Rate	100	101	104	104	104	104	103	103	106	107	107	105	104	105	104	104	102		1.06	
EU28	Total economy excluding ag	Rate	100	99	99	101	104	104	104	104	103	104	106	107	106	106	106	105	105		1.01	
FI	Agriculture	Level	100	99	97	91	80	78	77	76	74	74	70	67	66	63	65	63	55		0.75	
FI	Total economy excluding ag	Level	100	96	97	98	99	101	106	105	110	115	113	114	116	114	117	117	119		1.10	
FI	Agriculture	Rate	100	104	107	106	98	99	101	101	99	99	98	98	99	96	98	98	94		0.95	
FI	Total economy excluding ag	Rate	100	95	94	96	97	99	101	98	102	110	108	108	110	109	112	114	114		1.13	
FR	Agriculture	Level	100	101	104	122	102	102	108	95	81	89	89	87	84	89	84	79	81		0.81	
FR	Total economy excluding ag	Level	100	98	96	104	104	106	114	117	118	120	128	130	129	129	134	135	138		1.17	
FR	Agriculture	Rate	100	100	105	113	103	108	109	102	100	102	109	112	113	111	108	108	106	103		1.09
FR	Total economy excluding ag	Rate	100	96	93	98	98	98	104	105	104	107	114	116	114	112	117	118	120		1.04	
HR	Agriculture	Level	100	100	121	135	147	113	116	119	125	127	125	127	125	127	125	127	127		1.04	
HR	Total economy excluding ag	Level	100	100	93	91	95	104	108	109	102	98	94	93	87	85	86	83		0.76		
HR	Agriculture	Rate	100	100	111	124	132	125	124	122	124	126	126	126	126	126	126	126	126		1.00	
HR	Total economy excluding ag	Rate	100	100	93	89	94	98	91	91	86	87	87	88	82	78	77	73		0.80		
HU	Agriculture	Level	100	92	89	66	70	64	61	54	52	56	53	51	58	57	57	60	64		0.52	
HU	Total economy excluding ag	Level	100	99	93	96	105	100	92	91	88	88	86	84	81	79	82	82	83		0.88	
HU	Agriculture	Rate	100	94	84	77	84	83	80	74	76	79	77	77	79	79	74	72	72		0.76	
HU	Total economy excluding ag	Rate	100	97	91	93	102	98	88	87	85	87	86	84	80	76	74	73	71		0.85	
IE	Agriculture	Level	100	94	94	88	93	89	88	88	85	72	62	58	58	71	72	73	74		0.85	
IE	Total economy excluding ag	Level	100	103	105	106	113	116	117	129	134	127	118	114	110	114	116	116	117		1.34	
IE	Agriculture	Rate	100	101	100	100	105	103	100	101	102	104	99	97	95	94	95	97	95		1.02	
IE	Total economy excluding ag	Rate	100	100	98	98	101	97	94	99	102	105	102	100	98	100	100	98	95		0.93	
IT	Agriculture	Level	100	100	95	93	85	82	79	75	71	70	72	69	66	63	64	65	67		0.71	
IT	Total economy excluding ag	Level	100	100	101	102	114	112	112	112	110	107	107	106	106	104	103	102	101		1.10	
IT	Agriculture	Rate	100	99	97	96	101	96	90	91	92	92	94	92	88	88	86	85	85		0.92	
IT	Total economy excluding ag	Rate	100	98	97	96	105	105	100	100	99	97	98	97	97	97	97	97	97		0.94	
LT	Agriculture	Level	100	92	101	102	93	77	67	63	53	31	35	31	31	32	33	33	27		0.89	
LT	Total economy excluding ag	Level	100	118	122	133	119	125	142	142	141	116	95	95	104	125	127	136	156		1.41	
LT	Agriculture	Rate	100	101	100	97	102	96	88	85	69	78	74	76	75	77	72	71	68		0.98	
LT	Total economy excluding ag	Rate	100	120	121	128	114	117	133	127	124	112	96	96	104	122	123	130	145		1.24	
LU	Agriculture	Level	100	56	89	115	93	89	96	93	85	70	59	63	81	70	74	52	56			

I.15. Self-employment and unemployment

Table 22: Average change in self-employment rate when the unemployment rate changes

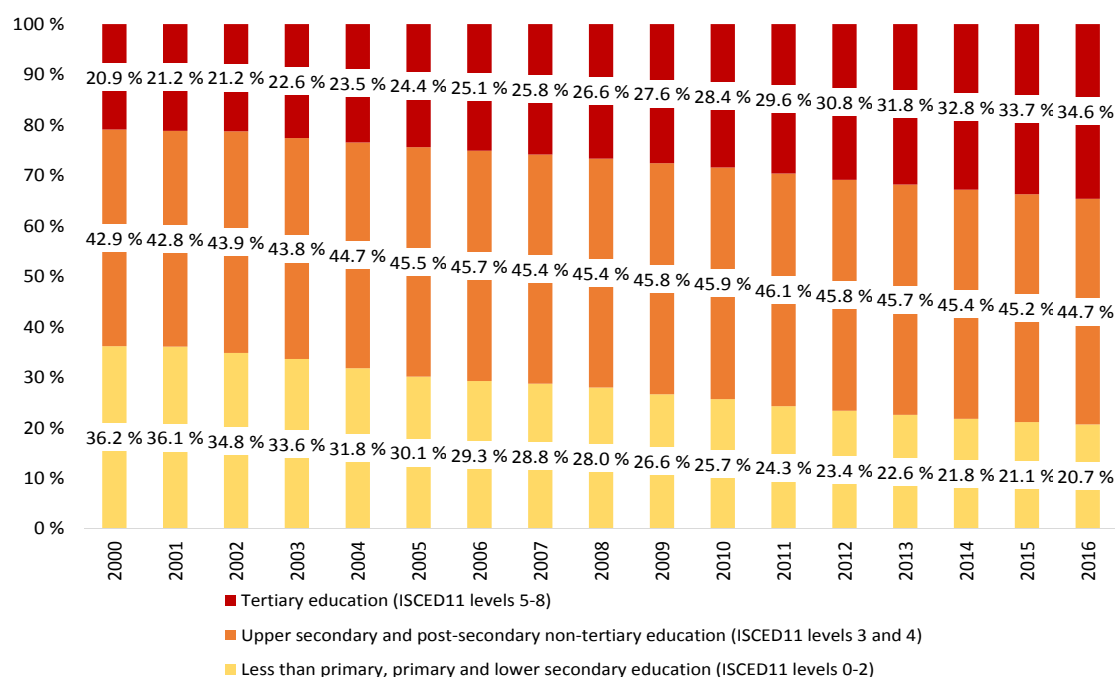
Country	Change (in %) in self-employment for a 1 percentage point fall in unemployment	Change (in %) in self-employment for a 1 percentage point rise in unemployment
Austria	-1.4 %	3.4 %
Belgium	-1.4 %	2.0 %
Bulgaria	-0.1 %	-5.7 %
Croatia	-0.5 %	-3.2 %
Cyprus	1.5 %	-0.9 %
Czech Republic	-1.4 %	3.0 %
Denmark	-0.1 %	0.7 %
Estonia	-1.4 %	-1.6 %
Finland	-0.4 %	-0.1 %
France	-3.6 %	3.7 %
Germany	0.7 %	3.3 %
Greece	0.0 %	-0.9 %
Hungary	1.2 %	-2.3 %
Ireland	-1.5 %	-0.1 %
Italy	-1.3 %	-1.2 %
Latvia	-0.9 %	-0.7 %
Lithuania	1.5 %	
Luxembourg		11.9 %
Malta	-3.8 %	
Netherlands	-5.3 %	3.5 %
Poland	0.1 %	-1.0 %
Portugal	2.6 %	-2.0 %
Romania	4.8 %	-3.9 %
Slovakia	-2.8 %	1.6 %
Slovenia	-0.9 %	-0.7 %
Spain	-2.1 %	-0.8 %
Sweden	0.2 %	0.7 %
United Kingdom	-6.1 %	1.9 %

Source: Eurostat

Note: Estimates for changes in self-employment are based on consecutive periods within a minimum of three years of unemployment falling or rising. Missing cells occur in countries where unemployment did not consistently rise or fall for a minimum of three years.

I.16. Trends in self-employment by education level

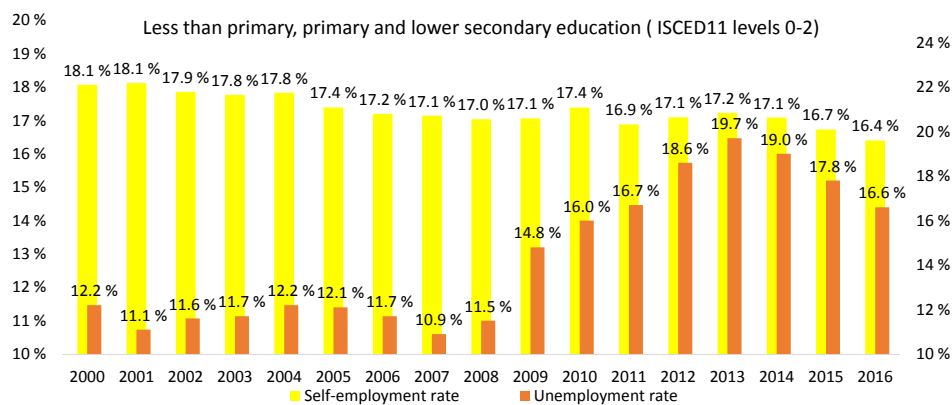
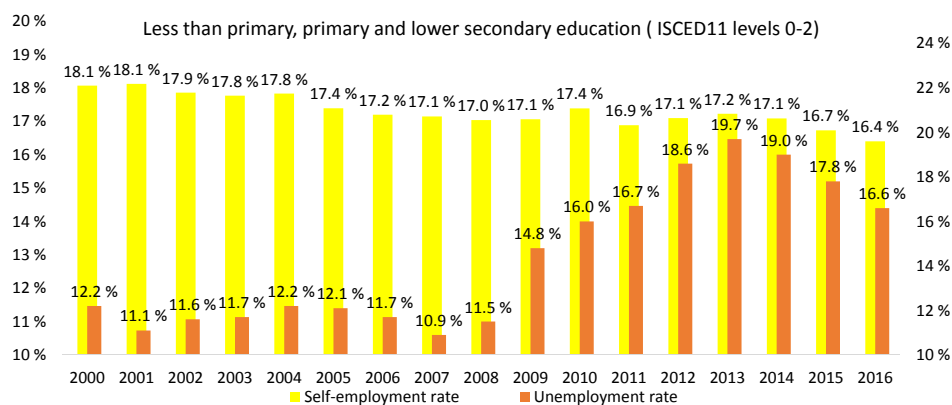
Figure 92: EU-28 self-employment by level of education in % of total self-employment - 2000-2016

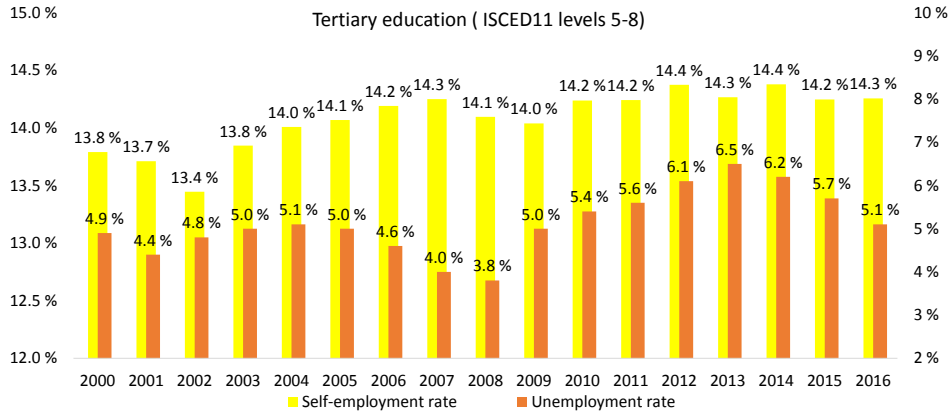


Source: Eurostat

Note: Croatia is included from 2002 onwards.

Figure 93: EU-28 self-employment and unemployment rates by level of education, 2000-2016

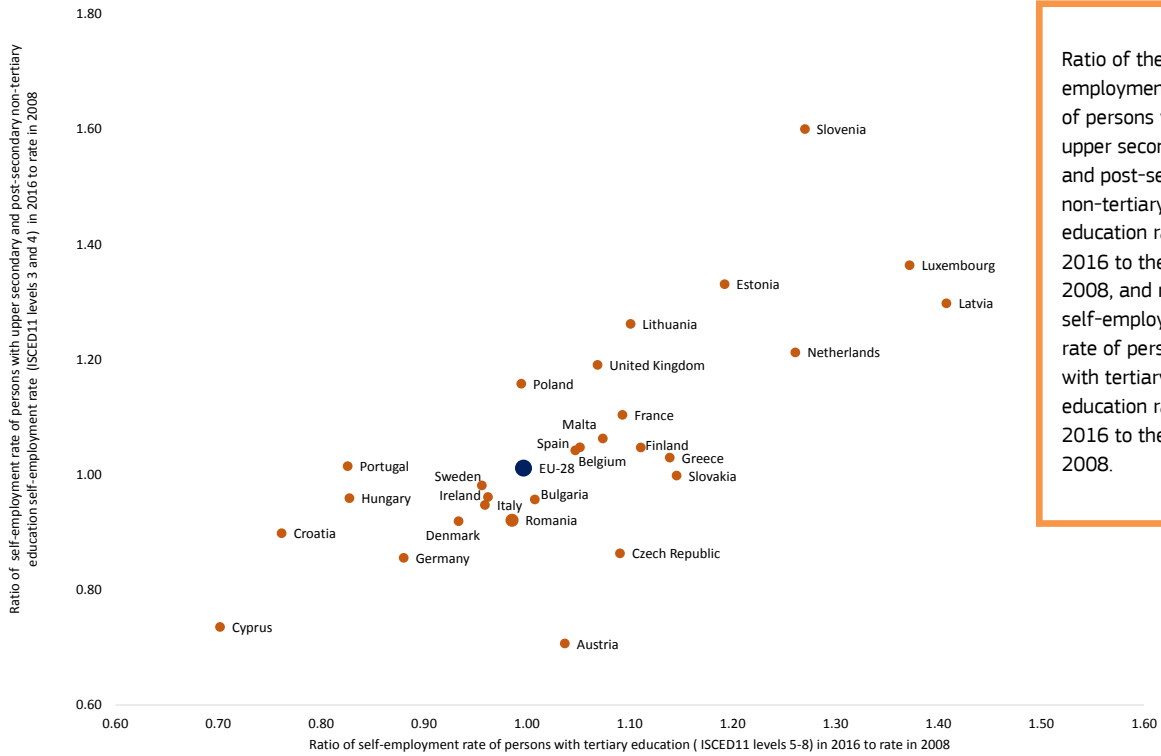


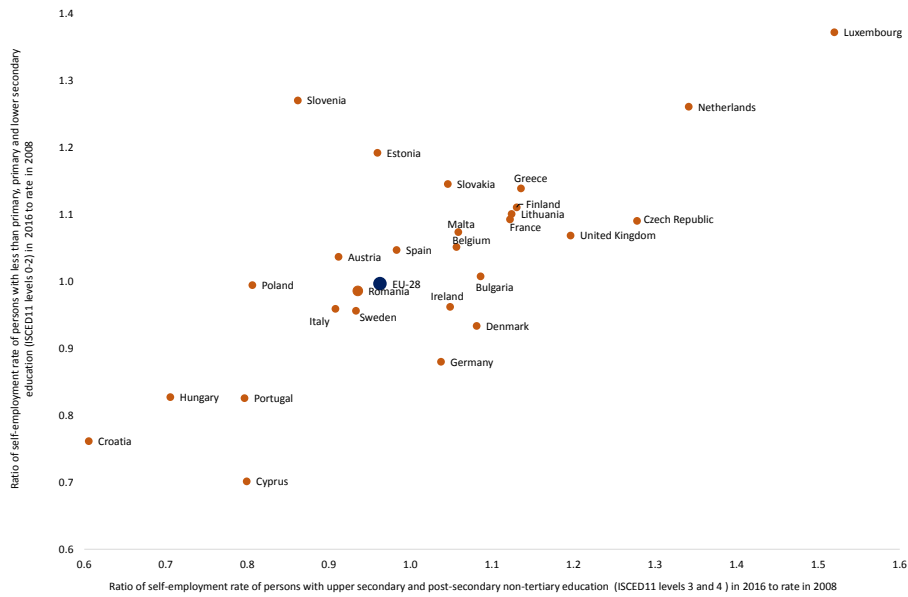


Source: Eurostat

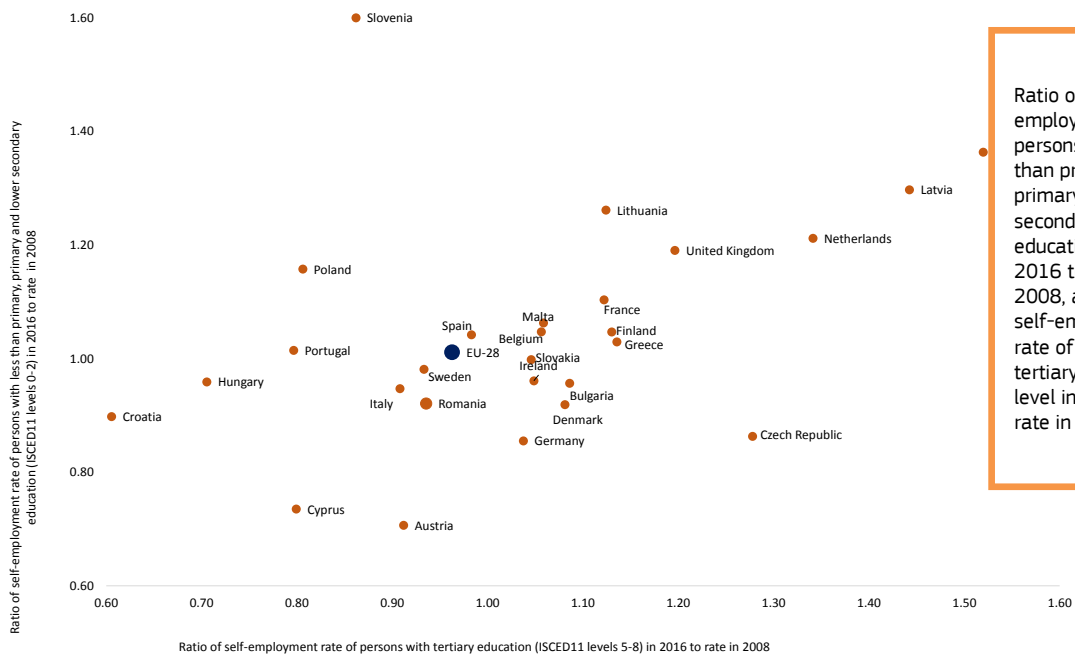
Note: Croatia is included from 2002 onwards.

Figure 94: Ratio of EU-28 self-employment rate in 2016 to rate in 2008 by education level





Ratio of the self-employment rate of persons with less than primary, primary and lower secondary education levels in 2016 to the rate in 2008, and ratio of self-employment rate of persons with upper secondary and post-secondary non-tertiary education rate in 2016 to the rate in 2008.



Ratio of the self-employment rate of persons with less than primary, primary and lower secondary education levels in 2016 to the rate in 2008, and ratio of self-employment rate of persons with tertiary education level in 2016 to the rate in 2008.

Source: Eurostat

Note: Estimates based on annual data 2000-2016 for 16-64 year olds

The self-employment rate in the lower education level:

- fell from 2008 to 2016 in twelve Member States (AT, CY, EE, ES, HR, HU, IT, PL, PT, RO, SE and SI). The largest decreases were in CY, HU, and PT. In contrast, the self-employment rate rose in the other Member States, with the largest increases experienced in LU, LV and NL (Figure 95).

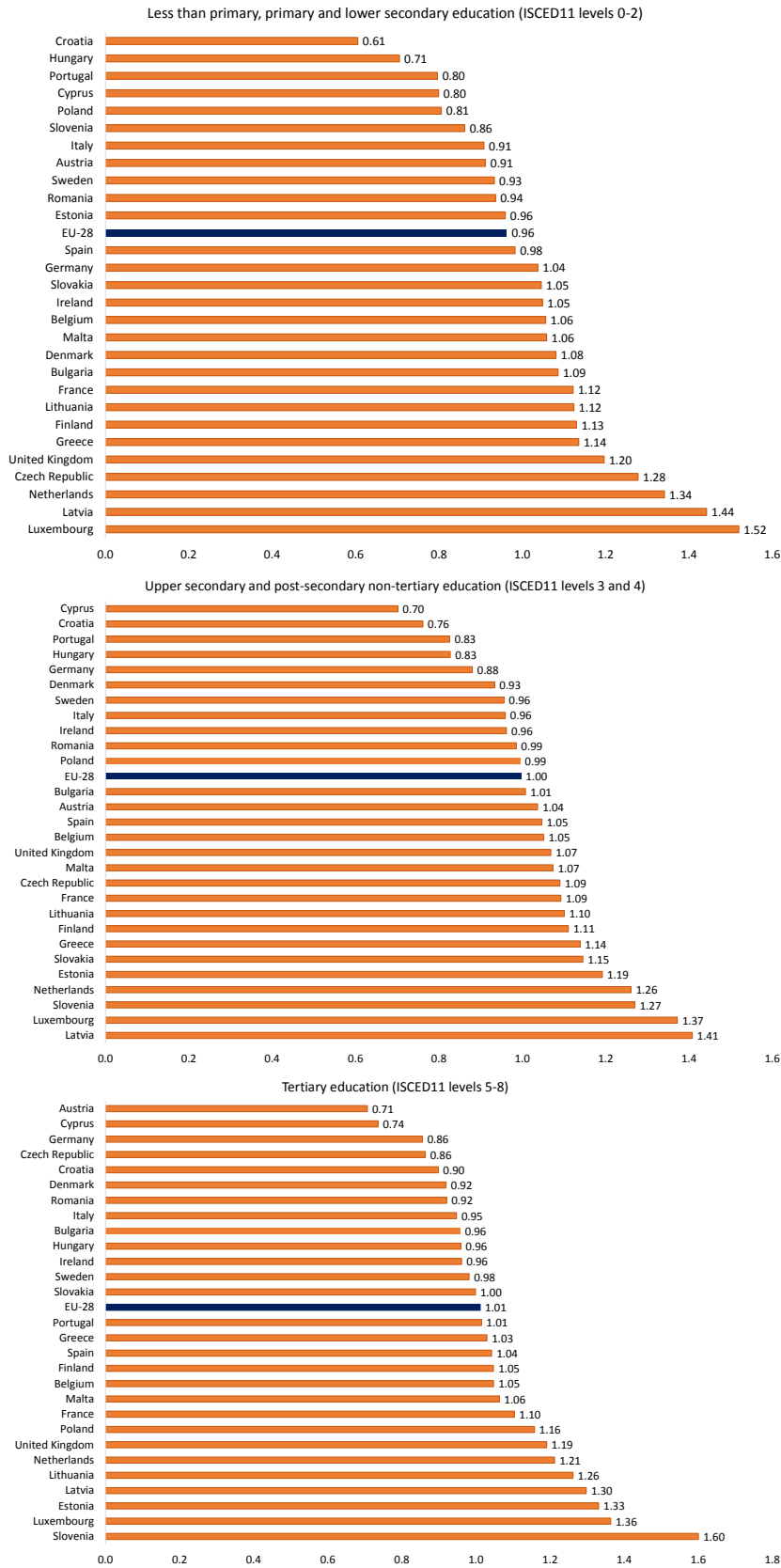
The self-employment rate in the upper secondary and post-secondary non-tertiary education level:

- decreased in eleven Member States from 2008 to 2016 (CY, DE, DK, IE, IT, HR, HU, PL, PT, RO, SE). Particularly large decreases were experienced in Croatia and Cyprus.
- increased in the other Member States.

The self-employment rate in the tertiary education level:

- fell in thirteen Member States (AT, BG, CY, CZ, DE, DK, IE, IT, HR, HU, RO, SE and SI);
- remained stable in SK and increased in the other Member States.

Figure 95: Ratio of self-employment rate in 2016 to self-employment rate in 2008 by education level



Source: Eurostat

Note: Estimates based on annual data 2000- 2016 for 16-64 year olds

Between 2000 and 2016, the self-employment rate for those with less than primary, primary and lower secondary education levels in the EU-28 fell from 18.1 % in 2000 to 16.4 % in 2016 (Figure 96).

Over the same period, the self-employment rate of those with a tertiary education level increased from 13.8 % to 14.3 %. This increase occurred during the pre-crisis period, and there has been little change in the self-employment rate of those with a tertiary education level since 2007.

Although the rate of self-employment for those with secondary and post-secondary non-tertiary education levels fluctuated between 2000 and 2016, the rate stood at the same level in 2016 as in the year 2000.

Figure 96: EU-28 self-employment rates by level of education, 2000 – 2016.



Source: Eurostat

Note: Estimates based on annual data 2000-2016 for 16-64 year olds. Croatia is included from 2002 onwards.

The decrease in the self-employment rate between 2000 and 2016 for individuals with less than primary, primary, and lower secondary education levels also occurred within a large number of Member States (AT, BE, BG, CY, ES, HR, HU, IT, LT, LV, PL, PT, SE, SI). Table 23 shows that this decrease was particularly large in Hungary, Lithuania, and Poland.

The self-employment rate between 2000 and 2016 for individuals with a less than primary, primary and lower secondary education level remained stable in a further five Member States (DE, DK, EL, FI, RO) and increased in only eight Member States (CZ, FR, IE, LU, MT, NL, SK, UK).

The spread in ratios of the self-employment rate between 2000 and 2016 for individuals with upper secondary and post-secondary non-tertiary education was more diverse across Member States as shown by Table 23 below. The rate:

- remained stable for nine Member States (DE, DK, ES, FR, IT, LU, MT, RO, SE);
- decreased in nine Member States (BE, BG, CY, HR, HU, IE, LT, PL, PT);
- increased for ten Member States (AT, CZ, EE, EL, FI, LV, NL, SI, SK, UK).

The self-employment rate between 2000 and 2016 for individuals with upper secondary and post-secondary non-tertiary education showed a particularly large increase in Slovakia, where the rate of self-employment more than doubled between 2000 and 2016.

The change in the self-employment rate between 2000 and 2016 for individuals with tertiary education levels also followed a varied picture across Member States as shown by Table 23 below, the rate:

- remained stable in four Member States (BE, EL, IT, LV);
- decreased in thirteen Member States (AT, CY, CZ, DE, DK, HR, HU, IE, LT, LU, MT, RO, SE);
- increased in eleven Member States (BG, EE, ES, FI, FR, NL, PL, PT, SK, SI , UK).

Table 23: Ratio of self-employment rate in 2016 to self-employment rate in 2000 in EU-28 Member States

	Less than primary, primary and lower secondary education (ISCED11 levels 0-2)	Upper secondary and post-secondary non-tertiary education (ISCED11 levels 3 and 4)	Tertiary education (ISCED11 levels 5-8)
Austria	0.7	1.1	0.8
Belgium	0.9	0.9	1.0
Bulgaria	0.6	0.9	1.2
Croatia	0.7	0.7	0.8
Cyprus	0.7	0.7	0.6
Czech Republic	1.2	1.2	0.8
Denmark	1.0	1.0	0.9
Estonia		1.2	1.2
Finland	1.0	1.0	1.1
France	1.1	1.0	1.1
Germany	1.0	1.0	0.9
Greece	1.0	1.2	1.0

Hungary	0.3	0.7	0.8
Ireland	1.1	0.9	0.9
Italy	0.9	0.9	1.0
Latvia	0.8	1.4	1.0
Lithuania	0.4	0.7	0.9
Luxembourg	1.2	1.0	0.8
Malta	1.3	1.0	0.9
Netherlands	1.6	1.4	1.5
Poland	0.6	0.9	1.3
Portugal	0.8	0.8	1.2
Romania	1.0	1.0	0.8
Slovakia	1.4	2.1	1.4
Slovenia	0.8	1.2	1.4
Spain	0.9	1.0	1.1
Sweden	0.8	1.0	0.9
United Kingdom	1.6	1.1	1.2
EU-28	0.9	1.0	1.0

Source: Eurostat

Note: Croatia is included from 2002 onwards. Data for ISCED11 levels 4-8 are included for Malta from 2003 onwards and data for ISCED11 levels 0-2 has not been included for Estonia due to missing data gaps. ISCED 11 refers to the International Standard Classification of Education from 2011 which is a statistical framework for education maintained by the United Nations Educational, Scientific and Cultural Organisation (UNESCO). Cells with darker orange shading denote cells where the self-employment rate increased, cells with light orange shading denote cells where the self-employment rate was unchanged, and cells with no shading denote cells where the self-employment rate fell.

I.17. Evolution of self-employment from 2008 to 2016 in the different industries of EU-28 Member States

Table 24: Ratio of self-employment rate in 2016 to self-employment rate in 2008 in different industries

Country	Austria	Belgium	Bulgaria	Croatia	Cyprus	Czech Republic	Denmark	EU-28	Estonia
Agriculture, forestry and fishing	1.0	1.1	0.8	0.8	0.6	1.3	0.7	1.0	0.9
Mining and quarrying						0.0		1.0	
Manufacturing	0.9	1.1	1.1	0.9	0.5	1.1	1.0	0.9	1.9
Electricity, gas, steam and air conditioning supply						0.5		1.5	
Water supply; sewerage, waste management and remediation activities						0.8		1.0	
Construction	1.3	1.3	1.6	0.7	0.8	1.1	0.8	1.1	1.9
Wholesale and retail trade; repair of motor vehicles and motorcycles	1.1	0.8	0.9	0.6	0.5	0.9	0.8	0.9	1.1
Transportation and storage	1.2	1.2	1.2	1.0	0.6	0.8	0.8	0.9	1.0
Accommodation and food service activities	0.8	1.0	1.0	0.7	0.5	1.0	0.7	0.9	
Information and communication	1.0	1.3	0.8	0.6	0.0	1.3	1.2	1.1	
Financial and insurance activities	1.2	1.1			1.1	1.4		1.2	
Real estate activities	1.5	0.9		1.0	0.0	1.1	0.6	1.0	1.4
Professional, scientific and technical activities	1.0	1.1	1.0	1.4	1.0	1.0	1.1	1.0	1.0
Administrative and support service activities	1.0	0.9		0.5	0.9	1.1	0.7	1.1	
Public administration and defence; compulsory social security						0.4		1.1	
Education	0.8	1.1		0.6	1.8	1.4	1.9	1.3	
Human health and social work activities	1.1	0.9	0.9	1.1	0.4	1.0	1.2	1.1	
Arts, entertainment and recreation	0.9	1.1	1.4	0.0	0.6	1.0	0.9	1.0	
Other service activities	1.2	1.0	0.9	1.0	0.9	1.4	1.0	1.1	1.1

Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use				0.0		1.9		0.9	
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Country	Finland	France	Germany	Greece	Hungary	Ireland	Italy	Latvia	Lithuania
Agriculture, forestry and fishing	1.0	1.0	1.0	1.1	0.9	0.9	0.9	1.1	1.0
Mining and quarrying							0.0		
Manufacturing	1.1	0.9	0.9	0.9	0.9	0.9	0.8	1.3	1.1
Electricity, gas, steam and air conditioning supply							1.2		
Water supply; sewerage, waste management and remediation activities			0.8				0.6		
Construction	1.2	1.3	1.0	1.4	1.0	1.1	1.1	1.7	1.2
Wholesale and retail trade; repair of motor vehicles and motorcycles	0.9	1.0	0.8	0.9	0.8	0.9	1.0	1.2	1.0
Transportation and storage	1.0	1.1	0.7	1.0	0.8	0.8	0.7	1.8	
Accommodation and food service activities	1.2	0.9	0.8	0.9	0.8	0.8	0.9	1.7	
Information and communication	1.5	1.3	0.9	0.9	1.1	1.1	0.9	1.1	
Financial and insurance activities	1.0	1.5	0.9	1.4	0.8	1.0	1.1		
Real estate activities	1.1	1.2	1.0	0.6	0.7	1.1	0.9		
Professional, scientific and technical activities	1.2	1.3	0.9	1.1	1.1	1.0	1.0	1.7	
Administrative and support service activities	1.3	1.0	0.9	1.3	0.9	1.1	0.8		
Public administration and defence; compulsory social security							0.3		
Education	1.0	2.0	1.0	1.1	0.9	1.0	1.0		
Human health and social work activities	1.1	1.0	0.9	1.3	0.8	1.1	1.0	0.8	
Arts, entertainment and recreation	1.1	1.0	1.0	1.0	0.8	1.2	0.9		
Other service activities	1.2	1.3	1.1	1.0	1.0	1.2	0.9	1.7	1.3
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use			0.8	1.3				0.0	

Country	Luxembourg	Malta	Netherlands	Poland	Portugal	Romania	Slovakia	Slovenia	Spain	Sweden	United Kingdom
Agriculture, forestry and fishing	1.0	0.9	1.2	1.0	0.7	1.0	1.1	1.1	0.8	0.9	0.9
Mining and quarrying									0.7		1.3
Manufacturing		1.3	1.3	1.1	0.9	1.1	1.2	1.4	0.9	0.9	1.2
Electricity, gas, steam and air conditioning supply									1.5		2.3
Water supply; sewerage, waste management and remediation activities				0.9					1.6		1.1
Construction	1.2	1.1	1.4	1.2	1.0	1.2	1.1	1.4	1.4	1.0	1.1
Wholesale and retail trade; repair of motor vehicles and motorcycles	1.2	0.9	1.2	0.8	0.9	0.7	1.0	1.6	1.0	0.8	1.0
Transportation and storage		0.9	1.3	0.9	0.6	0.7	0.9	0.8	1.0	0.8	1.2
Accommodation and food service activities	0.5	1.1	1.3	1.1	0.7	0.6	1.1	1.4	0.9	0.8	0.8
Information and communication			1.5	1.3	0.7		1.4	1.6	1.0	1.2	1.3
Financial and insurance activities			4.4	1.0	1.4		1.4	0.0	0.8		1.9
Real estate activities			1.1	1.5	0.9		1.3		0.9	1.0	0.9
Professional, scientific and technical activities	0.9	0.8	1.3	1.2	1.0	1.3	1.0	1.8	1.1	0.9	1.1
Administrative and support service activities		0.7	2.3	1.1	0.9		0.8	1.5	1.2	1.0	1.2
Public administration and defence; compulsory social security			2.2								1.8
Education			2.0	1.5	1.6		1.5	3.5	1.0	0.9	1.6
Human health and social work activities	2.0		1.4	1.5	0.9	1.2	3.2	1.3	1.1	0.8	1.1
Arts, entertainment and recreation		0.9	1.2	1.0	1.1		1.0	1.8	1.1	0.9	1.1
Other service activities		1.1	1.2	1.1	1.0	0.9	1.1	0.9	1.1	0.9	1.2
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use			0.0		0.0	0.8					0.9

Source: Eurostat

Note: Estimates based on available data at Member State level for 15-64 year olds

I.18. Disclaimers of national statistical organisations

France

This work is supported by a public grant overseen by the French National Research Agency (ANR) as part of the “Investissements d’Avenir” program (reference: ANR-10-EQPX-17 - Centre d’accès sécurisé aux données – CASD)

Greece

This document has been created with data from the Hellenic Statistical Authority. The results and conclusions presented are the property of the researcher.

Hungary

This document has been created with the use of ‘Template for London Economics data request revised_confid’.Datafile prepared upon individual request by the Hungarian Central Statistical Office (www.ksh.hu). The calculations and the conclusion are the sole intellectual property of London Economics Ltd.

Ireland

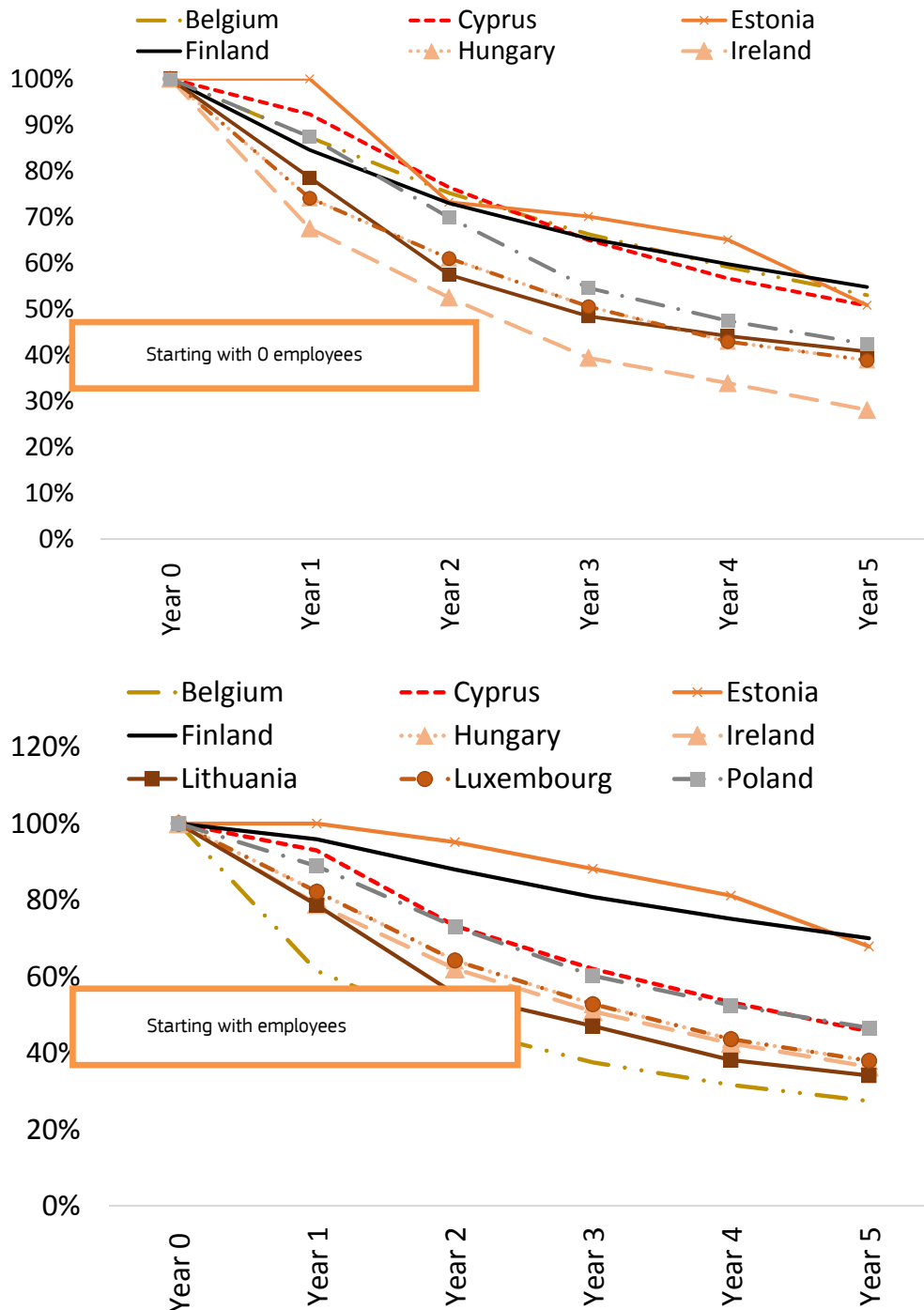
This work contains statistical outputs from Research Microdata Files from the CSO. The CSO will not take any responsibility for the views expressed or the outputs generated from the research undertaken on the RMF(s).

United Kingdom

This work contains statistical data from ONS which is Crown Copyright. The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

I.19. Survival rate of firms created by self-employed persons

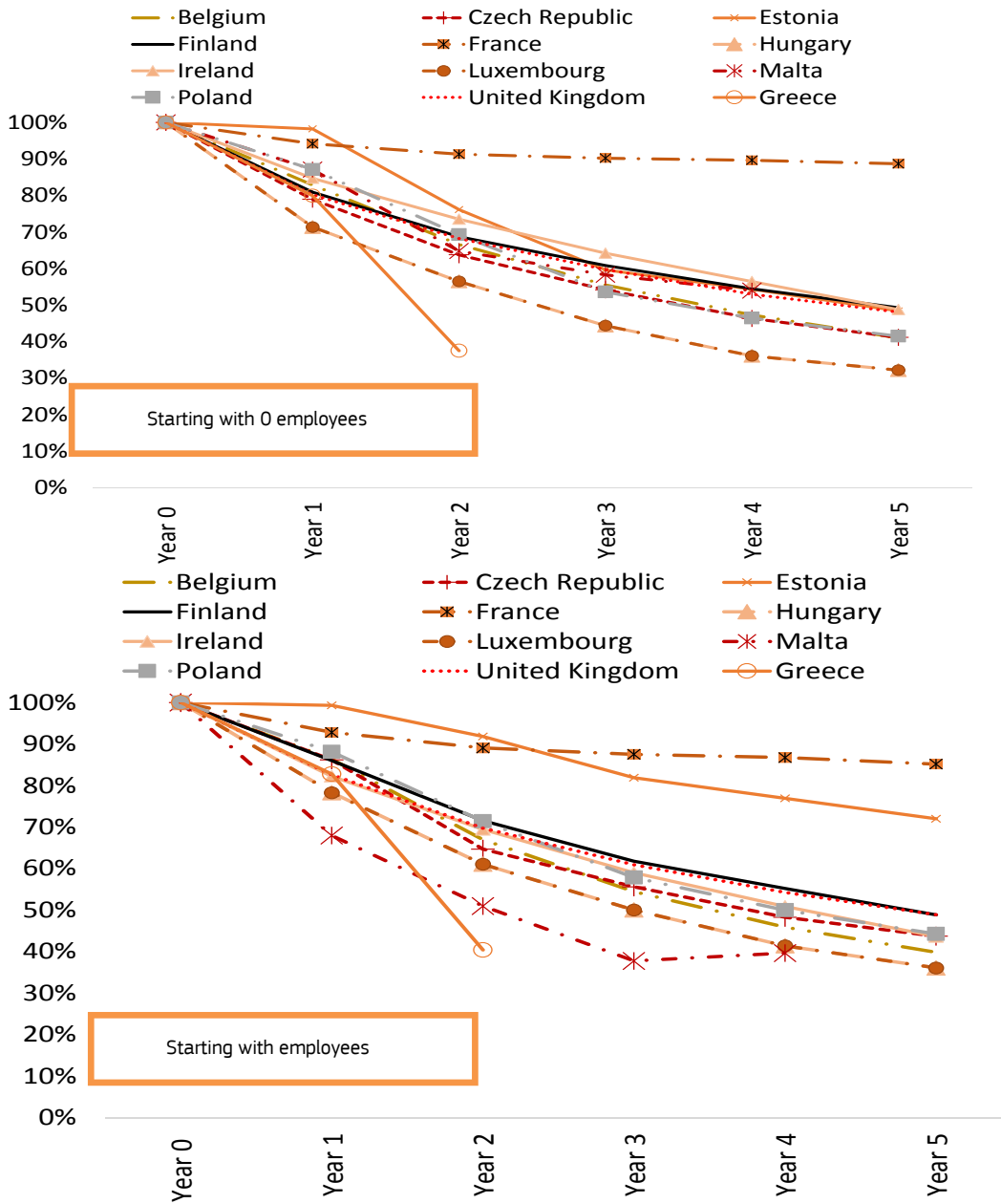
Figure 97: Survival rate for self-employed firms up to five years after firm creation, for cohorts for which data are available



Source: Statistics Belgium, Cystat, Statistics Estonia, Statistics Finland, Hungarian Central Statistical Office, Central Statistics Office Ireland, Statistics Lithuania, Statistics Luxembourg and Central Statistics Office Poland.

Note: Luxembourg is assumed to have one self-employed individual per self-employed firm, as only data for number of employees was made available. Data refers to cohorts 2008 and 2009 in order to have a minimum of five years of data recorded after firm creation. The Czech Republic, France, Greece, Malta and the UK are not included as no self-employment could be identified in incorporated firms.

Figure 98: Survival rate for sole proprietors up to five years after firm creation, for cohorts for which data are available



Source: Statistics Belgium, Czech Statistical Office, Statistics Estonia, Statistics Finland, Hungarian Central Statistical Office, UK Office of National Statistic, Central Statistics office of Poland, Central Statistics Office of Ireland, Insee France, DGFIP, Malta Statistics Authority, and the Hellenic Statistics Authority .

Note: Data refers to cohorts 2008 and 2009 in order to have a minimum of five years of data recorded after firm creation. Finland is not currently included as there is an outstanding question on the appropriate definition of the death rate used to estimate survival. Finland will be included in the final report. Cyprus, Lithuania and Luxembourg are not included as no special status exists for sole-proprietors. France is assumed to have one self-employed individual per self-employed firm, as only data for number of employees was made available.

I.20. Employment creation and destruction by different cohorts of new firms

Estonia

Table 25: Direction of employment change in self-employed firms with 0 employees in Estonia by cohort, 2008-2014

Cohort	Direction of employment change	Employment change in year 1	Share of firms in year 1	Employment change in year 2	Share of firms in year 2	Employment change in year 3	Share of firms in year 3	Employment change in year 4	Share of firms in year 4	Employment change in year 5	Share of firms in year 5
2008	Died	-1,430	26%	-1,661	32%	-2,183	43%	-2,884	56%	-3,793	61%
	Negative change	-1,667	30%	-1,464	26%	-1,141	20%	-607	11%	-558	10%
	No change	0	35%	0	32%	0	28%	0	24%	0	21%
	Positive change	1,535	9%	1,752	9%	1,974	9%	2,170	9%	2,216	9%
2009	Died	-1,867	28%	-2,175	32%	-3,051	48%	-4,210	54%	-5,988	62%
	Negative change	-1,655	25%	-1,631	24%	-777	12%	-727	11%	-446	7%
	No change	0	37%	0	32%	0	28%	0	24%	0	21%
	Positive change	2,327	10%	3,642	12%	4,233	12%	4,373	12%	4,383	11%
2010	Died	-2,196	31%	-2,570	41%	-3,437	46%	-4,474	57%		
	Negative change	-1,625	23%	-1,156	16%	-1,135	16%	-614	9%		
	No change	0	36%	0	31%	0	27%	0	23%		
	Positive change	2,289	9%	3,825	12%	3,976	11%	3,958	11%		
2011	Died	-3,358	36%	-3,860	41%	-4,970	55%				
	Negative change	-1,908	21%	-1,916	21%	-1,114	12%				
	No change	0	36%	0	30%	0	26%				
	Positive change	1,855	7%	2,861	8%	2,985	8%				
2012	Died	-4,352	47%	-5,214	58%						
	Negative change	-1,078	12%	-625	7%						
	No change	0	36%	0	28%						

	Positive change	1,579	6%	2,682	7%						
2013	Died	-6,306	57%	-7,238							
	Negative change	-776	7%	-528							
	No change	0	30%	0							
	Positive change	2,021	6%	3,099							
2014	Died	-5,753	64%								
	Negative change	-6	0%								
	No change	0	30%								
	Positive change	1,623	6%								

Source: Statistics Estonia

Note: Data for firms with employees was not included due to the requirement to remove a significant number of enterprises for reasons of data confidentiality.

Table 26: Direction of employment change in sole proprietor firms in Estonia by cohort, 2008-2013

Cohort	Direction of employment change	Employment change in year 1	Share of firms in year 1	Employment change in year 2	Share of firms in year 2	Employment change in year 3	Share of firms in year 3	Employment change in year 4	Share of firms in year 4	Employment change in year 5	Share of firms in year 5
2008	Died	-1,308	46%	-2,541	90%	-2,593	92%	-2,624	93%	-2,651	94%
	Negative change	-53	1%	-66	2%	-58	1%	-39	1%	-40	1%
	No change	0	52%	0	8%	0	6%	0	6%	0	5%
	Positive change	16	0%	9	0%	9	0%	8	0%	22	0%
2009	Died	-1,121	11%	-2,196	22%	-3,023	30%	-3,823	37%	-4,623	43%
	Negative change	-328	3%	-425	4%	-371	3%	-287	3%	-229	2%
	No change	0	86%	0	74%	0	66%	0	60%	0	54%
	Positive change	32	0%	53	0%	53	0%	59	0%	105	1%
2010	Died	-838	21%					-2,178	52%		
	Negative change	-268	7%					-91	2%		
	No change	0	73%					0	45%		
	Positive change	13	0%					20	0%		
2011	Died	-425	32%	-636	48%	-762	58%				

	Negative change	-85	6%	-51	4%	-26	2%				
	No change	0	61%	0	48%	0	39%				
	Positive change	9	1%	4	0%	11	0%				
2012	Died	-388	32%			-738	62%				
	Negative change	-59	5%			-4	0%				
	No change	0	63%			0	38%				
	Positive change	5	0%			8	0%				
2013	Died	-394	33%	-598	52%						
	Negative change	-28	2%	-3	0%						
	No change	0	64%	0	47%						
	Positive change	10	1%	19	1%						

Source: Statistics Estonia

Note: Data for firms with 0 and with employees was combined to avoid having to remove a significant number of enterprises for reasons of data confidentiality.

France

Table 27: Direction of employment change in sole-proprietors with 0 employees in France by cohort, 2008-2013

	Direction of employment change	Employment change in year 1	Share of firms in year 1	Employment change in year 2	Share of firms in year 2	Employment change in year 3	Share of firms in year 3	Employment change in year 4	Share of firms in year 4	Employment change in year 5	Share of firms in year 5
2008	Died	0	14%	0	32%	0	43%	0	48%	0	59%
	No change	0	54%	0	39%	0	31%	0	26%	0	22%
	Positive change	1,267	31%	1,376	29%	1,343	26%	1,337	26%	1,022	19%
2009	Died	0	18%	0	33%	0	38%	0	53%	0	59%
	No change	0	54%	0	40%	0	35%	0	27%	0	23%
	Positive change	1,007	28%	1,130	27%	1,149	28%	949	20%	858	18%
2010	Died	0	21%	0	25%	0	47%	0	56%		
	No change	0	53%	0	47%	0	32%	0	26%		
	Positive change	937	27%	967	27%	914	21%	781	18%		
2011	Died			0	32%	0	43%				
	No change			0	40%	0	33%				
	Positive change			877	28%	817	24%				
2012	Died	0	19%	0	34%						
	No change	0	55%	0	39%						
	Positive change	720	27%	792	27%						
2013	Died	0	21%								
	No change	0	54%								
	Positive change	792	25%								

Source: Insee France, DGFIP

Note: Employment change based on salaried employment only as data on non-salaried employment as not available. Cells highlighted in grey could not be presented due to statistical disclosure control.

Table 28: Direction of employment change in sole-proprietors with employees in France by cohort, 2008-2013

Cohort	Direction of employment change	Employment change in year 1	Share of firms in year 1	Employment change in year 2	Share of firms in year 2	Employment change in year 3	Share of firms in year 3	Employment change in year 4	Share of firms in year 4	Employment change in year 5	Share of firms in year 5
2008	Died	-1,631	8%	-5,309	25%	-7,702	37%	-8,285	40%	-10,995	52%
	Negative change	-2,607	17%	-3,270	20%	-3,083	19%	-2,472	15%	-2,634	16%
	No change	0	59%	0	36%	0	27%	0	27%	0	18%
	Positive change	3,002	16%	4,090	19%	4,263	18%	4,249	18%	3,679	14%
2009	Died	-1,589	10%	-4,146	25%	-4,743	29%	-7,610	46%	-8,787	53%
	Negative change	-2,241	17%	-2,551	19%	-1,965	15%	-2,305	17%	-2,089	16%
	No change	0	56%	0	37%	0	37%	0	22%	0	18%
	Positive change	2,470	16%	3,288	19%	3,250	19%	2,986	15%	2,735	14%
2010	Died	-1,486	10%	-1,901	13%	-5,363	37%	-6,595	46%		
	Negative change	-1,943	17%	-1,497	14%	-2,116	18%	-1,865	16%		
	No change	0	56%	0	57%	0	28%	0	23%		
	Positive change	2,063	16%	2,071	16%	2,711	17%	2,587	15%		
2011	Died			-3,033	24%	-4,514	36%				
	Negative change			-1,948	19%	-1,860	18%				
	No change			0	39%	0	30%				
	Positive change			2,403	18%	2,365	16%				
2012	Died	-983	9%	-2,490	24%						
	Negative change	-1,339	17%	-1,536	19%						
	No change	0	59%	0	40%						
	Positive change	1,240	14%	1,671	17%						
2013	Died	-1,799	11%								
	Negative change	-2,065	17%								
	No change	0	57%								
	Positive change	1,943	15%								

Source: Insee France, DGFIP

Note: Employment change based on salaried employment only as data on non-salaried employment as not available. Cells highlighted in grey could not be presented due to statistical disclosure control.

Finland

Table 29: Direction of employment change in self-employed firms with 0 employees in Finland by cohort, 2008-2014

	Direction of employment change	Employment change in year 1	Share of firms in year 1	Employment change in year 2	Share of firms in year 2	Employment change in year 3	Share of firms in year 3	Employment change in year 4	Share of firms in year 4	Employment change in year 5	Share of firms in year 5
2008	Died	-101	14%	-211	26%	-320	34%	-382	39%	-465	44%
	Negative change	-110	16%	-85	12%	-79	11%	-76	10%	-316	27%
	No change	0	23%	0	15%	0	11%	0	9%	0	1%
	Positive change	575	47%	863	46%	1,088	44%	1,164	42%	1,434	28%
2009	Died	-115	17%	-209	28%	-311	35%	-392	42%	-462	46%
	Negative change	-56	11%	-58	10%	-44	8%	-236	27%	-229	24%
	No change	0	21%	0	13%	0	10%	0	1%	0	2%
	Positive change	573	51%	994	50%	1,112	46%	1,413	30%	1,467	27%
2010	Died	-71	12%	-144	21%	-227	28%	-286	35%	-335	42%
	Negative change	-55	11%	-57	10%	-327	35%	-298	32%	-81	12%
	No change	0	22%	0	15%	0	2%	0	Cohort	0	7%
	Positive change	634	56%	898	54%	1,339	34%	1,388	32%	1,619	39%
2011	Died	-61	10%	-167	22%	-239	30%	-301	38%		
	Negative change	-65	13%	-361	40%	-343	38%	-87	14%		
	No change	0	23%	0	2%	0	2%	0	9%		
	Positive change	568	54%	1,155	36%	1,417	30%	1,600	40%		
2012	Died	-90	14%	-160	24%	-269	34%				
	Negative change	-461	53%	-370	42%	-87	14%				
	No change	0	2%	0	2%	0	9%				
	Positive change	639	31%	886	32%	1,158	42%				
2013	Died	-78	19%	-116	31%						
	Negative change	-82	23%	-58	21%						

	No change	0	24%	0	15%						
	Positive change	84	34%	113	33%						
2014	Died	-80	30%								
	Negative change	-8	4%								
	No change	0	34%								
	Positive change	52	32%								

Source: Statistics Finland

Table 30: Direction of employment change in self-employed firms with employees in Finland by cohort, 2008-2014

Cohort	Direction of employment change	Employment change in year 1	Share of firms in year 1	Employment change in year 2	Share of firms in year 2	Employment change in year 3	Share of firms in year 3	Employment change in year 4	Share of firms in year 4	Employment change in year 5	Share of firms in year 5
2008	Died	-116	3%	-385	11%	-651	19%	-863	25%	-1,094	30%
	Negative change	-507	29%	-561	26%	-548	22%	-523	21%	-576	18%
	No change	0	10%	0	6%	0	5%	0	4%	0	2%
	Positive change	1,888	58%	2,577	56%	3,180	54%	3,343	49%	4,320	50%
2009	Died	-127	5%	-364	13%	-572	19%	-739	25%	-984	30%
	Negative change	-304	22%	-363	22%	-364	20%	-451	17%	-459	17%
	No change	0	9%	0	6%	0	5%	0	2%	0	2%
	Positive change	1,677	64%	2,459	59%	2,616	56%	3,515	56%	3,362	50%
2010	Negative change	-300	21%	-440	23%	-535	19%	-562	20%	-378	16%
	No change	0	8%	0	6%	0	2%	0	2%	0	1%
	Positive change	2,097	66%	2,561	60%	3,874	60%	3,824	54%	4,134	53%
2011	Died	-83	4%	-421	12%	-644	19%	-1,001	26%		
	Negative change	-362	25%	-480	20%	-557	20%	-397	17%		
	No change	0	8%	0	3%	0	3%	0	1%		
	Positive change	1,979	63%	3,636	66%	3,719	58%	4,012	56%		
2012	Died	-133	6%	-369	11%	-656	18%				
	Negative change	-408	20%	-540	22%	-377	17%				

	No change	0	4%	0	3%	0	2%				
	Positive change	2,946	71%	3,339	64%	3,952	63%				
2013	Died	-229	5%	-561	13%						
	Negative change	-1,205	46%	-1,143	42%						
	No change	0	7%	0	1%						
	Positive change	1,181	42%	1,683	43%						
2014	Died	-574	20%								
	Negative change	-352	40%								
	No change	0	1%								
	Positive change	498	39%								

Source: Statistics Finland

Table 31: Direction of employment change in proprietor self-employed firms with 0 employees in Finland by cohort, 2008-2014

Cohort	Direction of employment change	Employment change in year 1	Share of firms in year 1	Employment change in year 2	Share of firms in year 2	Employment change in year 3	Share of firms in year 3	Employment change in year 4	Share of firms in year 4	Employment change in year 5	Share of firms in year 5
2008	Died	-397	18%	-768	32%	-1,029	39%	-1,244	45%	-1,445	50%
	Negative change	-306	17%	-256	13%	-231	11%	-214	10%	-146	5%
	No change	0	25%	0	16%	0	13%	0	11%	0	6%
	Positive change	859	39%	1,123	40%	1,258	37%	1,149	33%	2,376	39%
2009	Died	-384	20%	-641	31%	-895	39%	-1,089	46%	-1,401	51%
	Negative change	-197	12%	-185	10%	-184	10%	-142	6%	-131	5%
	No change	0	22%	0	17%	0	13%	0	6%	0	6%
	Positive change	859	46%	1,017	42%	956	38%	2,112	42%	1,981	38%
2010	Died	-358	17%	-673	28%	-933	36%	-1,283	43%		
	Negative change	-214	13%	-210	12%	-171	7%	-127	6%		
	No change	0	23%	0	17%	0	7%	0	6%		
	Positive change	942	46%	1,005	43%	2,431	49%	2,333	45%		

2011	Died	-352	17%	-679	28%	-1,170	37%				
	Negative change	-237	15%	-180	8%	-155	7%				
	No change	0	23%	0	8%	0	7%				
	Positive change	846	44%	2,591	56%	2,409	49%				
2012	Died	-333	17%	-929	28%						
	Negative change	-223	12%	-181	9%						
	No change	0	10%	0	8%						
	Positive change	2,632	62%	2,469	55%						
2013	Died	-706	28%	-1,359							
	Negative change	-122	2%	-149							
	No change	0	59%	0							
	Positive change	374	11%	594							
2014	Died	-134	94%								
	Negative change	-11	0%								
	No change	0	4%								
	Positive change	57	1%								

Source: Statistics Finland

Table 32: Direction of employment change in sole proprietor firms with employees in Finland by cohort, 2008-2013

Cohort	Direction of employment change	Employment change in year 1	Share of firms in year 1	Employment change in year 2	Share of firms in year 2	Employment change in year 3	Share of firms in year 3	Employment change in year 4	Share of firms in year 4	Employment change in year 5	Share of firms in year 5
2008	Died	-197	15%	-405	30%	-635	41%	-755	47%	-827	53%
	Negative change	-172	26%	-166	22%	-132	17%	-160	19%	-86	2%
	No change	0	8%	0	6%	0	5%	0	3%	0	35%
	Positive change	534	50%	543	42%	580	38%	474	30%	823	55%
2009	Died	-175	12%	-391	26%	-541	35%	-655	42%	-799	12%
	Negative change	-156	28%	-154	22%	-201	25%	-151	15%	-139	0%
	No change	0	9%	0	7%	0	5%	0	3%	0	32%

	Positive change	444	51%	496	44%	343	34%	644	40%	635	0%
2010	Died	-250	17%	-465	30%	-577	40%	-694	48%		
	Negative change	-139	23%	-188	27%	-113	13%	-94	12%		
	No change	0	9%	0	6%	0	2%	0	2%		
	Positive change	497	51%	350	36%	730	45%	685	39%		
2011	Died	-210	16%	-382	28%	-576	39%				
	Negative change	-263	33%	-150	17%	-140	15%				
	No change	0	9%	0	3%	0	3%				
	Positive change	330	42%	810	52%	697	43%				
2012	Died	-114	11%	-314	25%	-487	36%				
	Negative change	-94	17%	-127	17%	-96	16%				
	No change	0	4%	0	4%	0	1%				
	Positive change	904	69%	801	54%	762	47%				
2013	Died	-207	16%	-401	30%						
	Negative change	-178	34%	-184	32%						
	No change	0	10%	0	1%						
	Positive change	332	39%	343	36%						

Source: Statistics Finland

Note: Data for 2014 is not included for reasons of data confidentiality.

Ireland

Table 33: Direction of employment change in self-employed firms in Ireland by cohort, 2008-2013

Cohort	Direction of employment change	Employment change in year 1	Share of firms in year 1	Employment change in year 2	Share of firms in year 2	Employment change in year 3	Share of firms in year 3	Employment change in year 4	Share of firms in year 4	Employment change in year 5	Share of firms in year 5
2008	Died	-816	26%	-1,438	43%	-1,826	54%	-2,088	61%	-2,346	67%
	Negative change	-190	12%	-113	8%	-117	8%	-98	6%	-80	5%
	No change	0	29%	0	23%	0	15%	0	12%	0	11%
	Positive change	856	33%	825	26%	755	23%	751	21%	705	18%
2009	Died	-486	24%	-843	39%	-1,122	52%	-1,311	60%	-1,449	66%
	Negative change	-94	9%	-58	7%	-53	5%	-39	5%	-30	4%
	No change	0	35%	0	27%	0	19%	0	15%	0	12%
	Positive change	479	31%	486	28%	474	23%	445	21%	400	18%
2010	Died	-395	21%	-728	36%	-994	48%	-1,182	57%		
	Negative change	-61	7%	-68	7%	-52	5%	-49	5%		
	No change	0	34%	0	24%	0	18%	0	13%		
	Positive change	604	38%	602	32%	605	29%	582	25%		
2011	Died	-403	18%	-802	36%	-1,101	49%				
	Negative change	-62	7%	-68	6%	-52	5%				
	No change	0	40%	0	29%	0	22%				
	Positive change	565	34%	531	29%	510	24%				
2012	Died	-508	24%	-840	40%						
	Negative change	-61	7%	-68	6%						
	No change	0	35%	0	25%						
	Positive change	582	34%	635	30%						
2013	Died	-395	21%								
	Negative change	-44	5%								
	No change	0	38%								
	Positive change	487	36%								

Source: Central Statistics Office Ireland

Table 34: Direction of employment change in sole-proprietors in Ireland by cohort, 2008-2013

Cohort	Direction of employment change	Employment change in year 1	Share of firms in year 1	Employment change in year 2	Share of firms in year 2	Employment change in year 3	Share of firms in year 3	Employment change in year 4	Share of firms in year 4	Employment change in year 5	Share of firms in year 5
2008	Died	-2,926	14%	-5,316	25%	-7,397	35%	-9,007	43%	-10,423	50%
	Negative change	-446	2%	-533	2%	-470	2%	-403	2%	-367	1%
	No change	0	78%	0	66%	0	57%	0	50%	0	43%
	Positive change	2,094	6%	2,238	6%	2,182	6%	2,089	6%	1,949	5%
2009	Died	-4,054	17%	-6,699	28%	-8,758	37%	-10,590	45%	-12,516	53%
	Negative change	-459	2%	-460	2%	-390	1%	-349	1%	-250	1%
	No change	0	77%	0	65%	0	56%	0	49%	0	41%
	Positive change	1,793	5%	2,088	5%	2,185	5%	2,273	5%	2,366	5%
2010	Died	-2,516	13%	-4,148	20%	-6,367	31%	-8,673	43%		
	Negative change	-256	1%	-408	2%	-321	1%	-175	1%		
	No change	0	78%	0	70%	0	60%	0	49%		
	Positive change	2,471	8%	2,770	8%	2,831	8%	2,971	8%		
2011	Died	-2,214	11%	-5,047	24%	-8,077	39%				
	Negative change	-277	1%	-297	1%	-234	1%				
	No change	0	81%	0	67%	0	52%				
	Positive change	2,183	7%	2,458	7%	2,798	7%				
2012	Died	-3,724	18%	-7,428	36%						
	Negative change	-212	1%	-195	1%						
	No change	0	75%	0	57%						
	Positive change	2,141	6%	2,394	6%						

Source: Central Statistics Office Ireland

Lithuania

Table 35: Direction of employment change in self-employed firms with 0 employees in Lithuania by cohort, 2008-2013

Cohort	Direction of employment change	Employment change in year 1	Share of firms in year 1	Employment change in year 2	Share of firms in year 2	Employment change in year 3	Share of firms in year 3	Employment change in year 4	Share of firms in year 4
2008	Died	-256	18.5 %	-663	42.1 %	-894	52.6 %	-1021	56.6 %
	Negative change	0	0.0 %	0	0.0 %	0	0.0 %	0	0.0 %
	No change	0	67.3 %	0	41.5 %	0	31.6 %	0	28.0 %
	Positive change	264	14.2 %	332	16.4 %	404	15.8 %	442	15.3 %
2009	Died	-261	26.3 %	-477	43.6 %	-602	49.9 %	-684	54.3 %
	Negative change	0	0.0 %	0	0.0 %	0	0.0 %	0	0.0 %
	No change	0	53.8 %	0	37.7 %	0	33.2 %	0	28.8 %
	Positive change	249	19.9 %	334	18.7 %	426	16.9 %	479	16.9 %
2010	Died	-107	20.7 %	-208	35.7 %	-260	43.0 %	-318	51.4 %
	Negative change	0	0.0 %	0	0.0 %	0	0.0 %	-1	0.2 %
	No change	0	66.1 %	0	53.9 %	0	47.7 %	0	39.5 %
	Positive change	80	13.2 %	80	10.5 %	88	9.3 %	90	8.9 %
2011	Died	-102	18.2 %	-191	30.5 %	-293	42.3 %		
	Negative change	0	0.0 %	0	0.0 %	-2	0.4 %		
	No change	0	71.6 %	0	58.2 %	0	48.2 %		
	Positive change	77	10.2 %	133	11.2 %	142	9.1 %		
2012	Died	-200	24.2 %	-374	37.2 %				
	Negative change	0	0.0 %	-4	0.5 %				

	No change	0	65.2 %	0	53.3 %				
	Positive change	115	10.6 %	130	8.9 %				
2013	Died	-136	18.5 %						
	Negative change	0	0.0 %						
	No change	0	75.5 %						
	Positive change	58	6.0 %						

Source: Statistics Lithuania

Table 36: Direction of employment change in self-employed firms with employees in Lithuania by cohort, 2008-2013

Cohort	Direction of employment change	Employment change in year 1	Share of firms in year 1	Employment change in year 2	Share of firms in year 2	Employment change in year 3	Share of firms in year 3	Employment change in year 4	Share of firms in year 4
2008	Died	-415	19.3 %	-1180	45.8 %	-1465	53.4 %	-1643	60.3 %
	Negative change	-195	15.5 %	-98	8.3 %	-122	8.3 %	-106	8.5 %
	No change	0	26.8 %	0	19.8 %	0	15.5 %	0	9.6 %
	Positive change	765	38.4 %	564	26.1 %	500	22.8 %	499	21.6 %
2009	Died	-278	24.5 %	-536	39.0 %	-652	48.6 %	-744	56.6 %
	Negative change	-45	2.8 %	-16	3.5 %	-18	3.0 %	-24	3.9 %
	No change	0	11.9 %	0	11.3 %	0	10.6 %	0	8.0 %
	Positive change	604	60.7 %	506	46.2 %	499	37.7 %	464	31.5 %
2010	Died	-106	13.4 %	-244	28.0 %	-392	40.2 %	-472	51.5 %
	Negative change	-17	5.2 %	-37	10.7 %	-47	12.5 %	-35	9.5 %
	No change	0	36.0 %	0	20.1 %	0	15.9 %	0	11.0 %
	Positive change	361	45.4 %	352	41.2 %	285	31.4 %	307	28.0 %
2011	Died	-129	12.5 %	-297	31.3 %	-467	47.5 %		
	Negative change	-106	27.2 %	-102	20.4 %	-60	13.6 %		
	No change	0	31.1 %	0	19.3 %	0	13.6 %		

	Positive change	220	29.2 %	230	29.0 %	245	25.3 %		
2012	Died	-49	11.7 %	-120	22.0 %				
	Negative change	-14	3.3 %	-20	7.5 %				
	No change	0	14.5 %	0	11.7 %				
	Positive change	286	70.6 %	303	58.9 %				
2013	Died	-89	23.5 %						
	Negative change	-10	6.1 %						
	No change	0	21.2 %						
	Positive change	174	49.2 %						

Source: Statistics Lithuania

United Kingdom

Table 37: Direction of employment change in sole proprietors in the United Kingdom by cohort, 2008-2015

Cohort	Direction of employment change	Employment change in year 1	Share of firms in year 1	Employment change in year 2	Share of firms in year 2	Employment change in year 3	Share of firms in year 3	Employment change in year 4	Share of firms in year 4	Employment change in year 5	Share of firms in year 5
2008	Died	-4759	3.4%	-6120	4.2%	-22253	20.2%	-32600	31.8%	-42168	41.7%
	Negative change	-6756	5.0%	-10023	7.8%	-9666	7.3%	-8473	6.1%	-7661	5.5%
	No change	0	81.3%	0	71.6%	0	52.9%	0	41.8%	0	34.5%
	Positive change	10035	10.3%	19243	16.4%	21157	19.6%	23463	20.2%	23428	18.3%
2009	Died	-2551	2.2%	-5208	5.4%	-15630	20.4%	-24960	33.9%	-33221	45.1%
	Negative change	-3259	4.6%	-5779	7.1%	-5516	6.4%	-5268	5.9%	-4363	4.7%
	No change	0	82.4%	0	71.0%	0	52.8%	0	41.4%	0	32.6%
	Positive change	7762	10.8%	14479	16.5%	17840	20.4%	18549	18.8%	19068	17.6%
2010	Died	-1638	1.9%	-3385	4.3%	-12031	19.3%	-20218	32.8%	-26761	43%
	Negative change	-2698	3.8%	-4210	5.8%	-4630	6.2%	-4030	5.2%	-3322	4%
	No change	0	82.7%	0	71.0%	0	54.2%	0	41.4%	0	33%
	Positive change	7514	11.6%	14287	19.0%	16469	20.3%	18073	20.6%	18956	19%
2011	Died	-1318	2.1%	-2571	4.0%	-10236	19.9%	-17388	36%	-22669	46%
	Negative change	-1958	3.2%	-3565	5.5%	-3346	5.2%	-2863	4%	-2441	4%
	No change	0	84.9%	0	74.7%	0	55.8%	0	41%	0	33%
	Positive change	6576	9.7%	11874	15.7%	14442	19.2%	16207	19%	15826	17%
2012	Died	-1964	1.7%	-4671	5.5%	-15245	25%	-24002	40%		
	Negative change	-2862	4.3%	-4336	6.3%	-4046	6%	-3530	5%		
	No change	0	82.8%	0	70.5%	0	50%	0	37%		
	Positive change	7037	11.3%	13170	18%	15810	19%	15366	17%		
2013	Died	-1467	1.4%	-4322	6%	-15887	27%				
	Negative change	-2842	4.3%	-4009	6%	-3823	6%				
	No change	0	81.4%	0	70%	0	50%				
	Positive change	9735	12.9%	14599	18%	15251	17%				

2014	Died	-1,659	1.1%	-7,015	7.3%						
	Negative change	-3,412	4.2%	-5,826	6.7%						
	No change	0	84.2%	0	73.6%						
	Positive change	10,080	10.5%	13,295	12.5%						
2015	Died	-1,635	1.4%								
	Negative change	-4,698	7.2%								
	No change	0	81.5%								
	Positive change	7,038	10.0%								

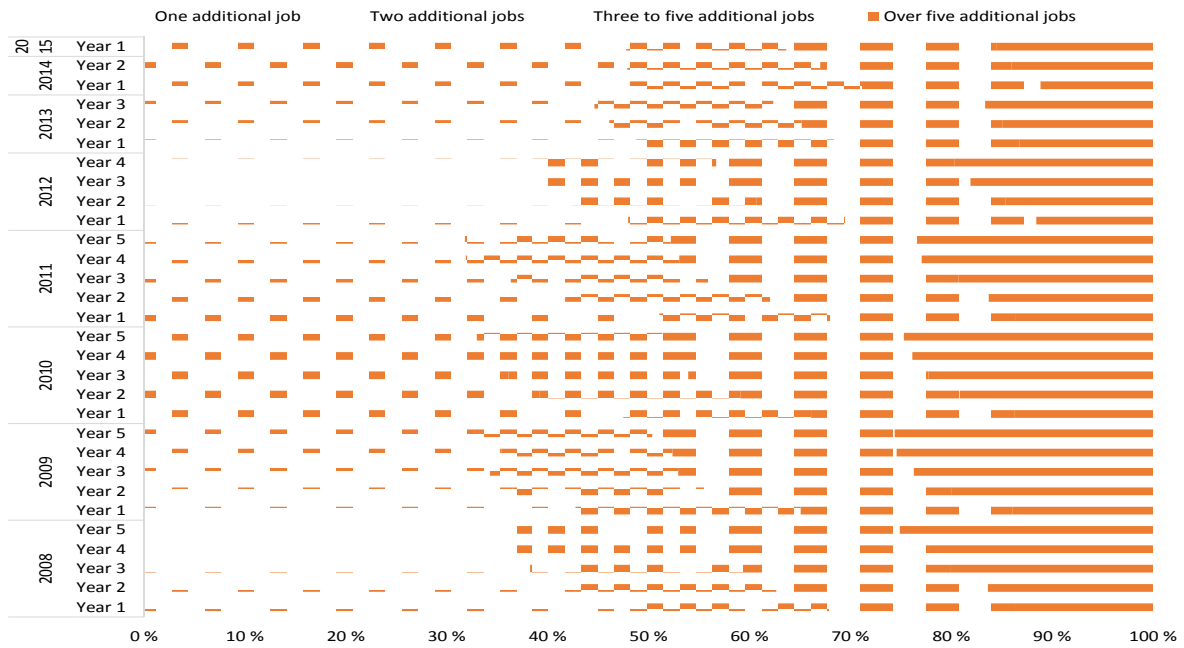
Source: UK Office of National Statistics

Note: Data for firms with 0 employees and with employees was combined to avoid having to remove a significant number of enterprises for reasons of data confidentiality.

I.21. Number of additional jobs created by new firms

Estonia

Figure 99: Breakdown of positive employment growth in Estonia in self-employed firms with 0 employees by cohort and number of years after creation, 2008-2015

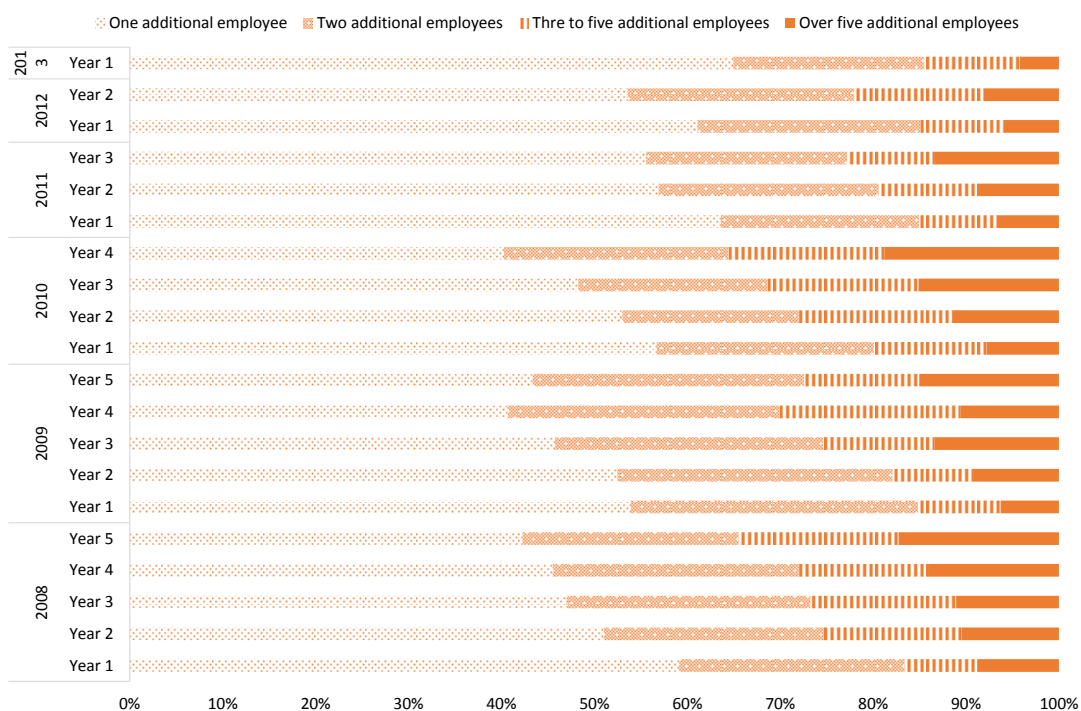


Source: Statistics Estonia

Note: Data for firms with employees could not be included because of data confidentiality.

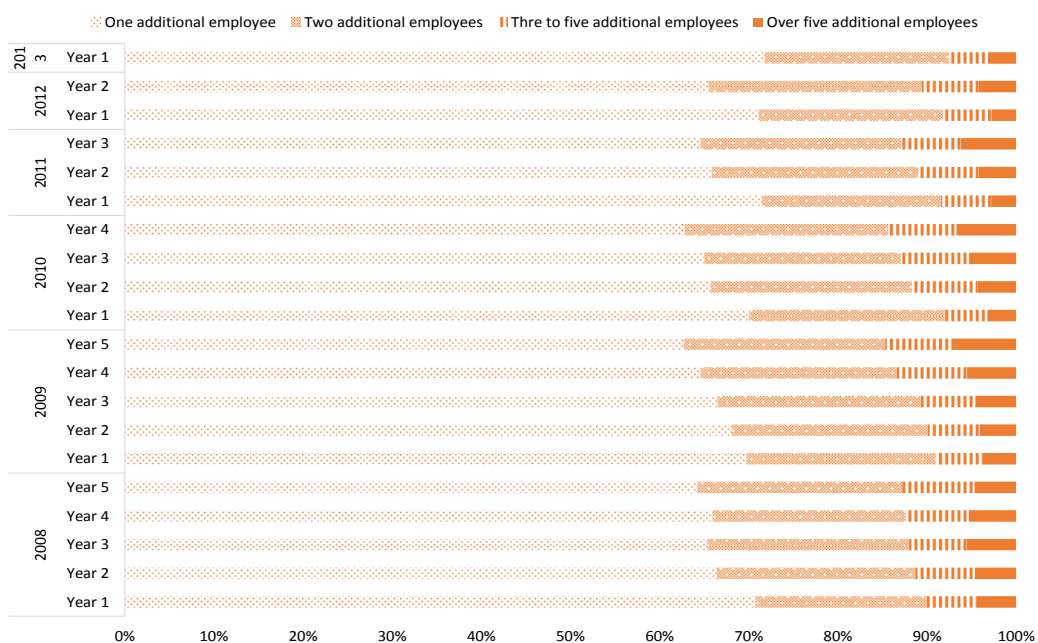
Ireland

Figure 100: Breakdown of positive employment growth in Ireland in self-employed firms by cohort and number of years after creation, 2008-2013



Source: Central Statistics Office Ireland

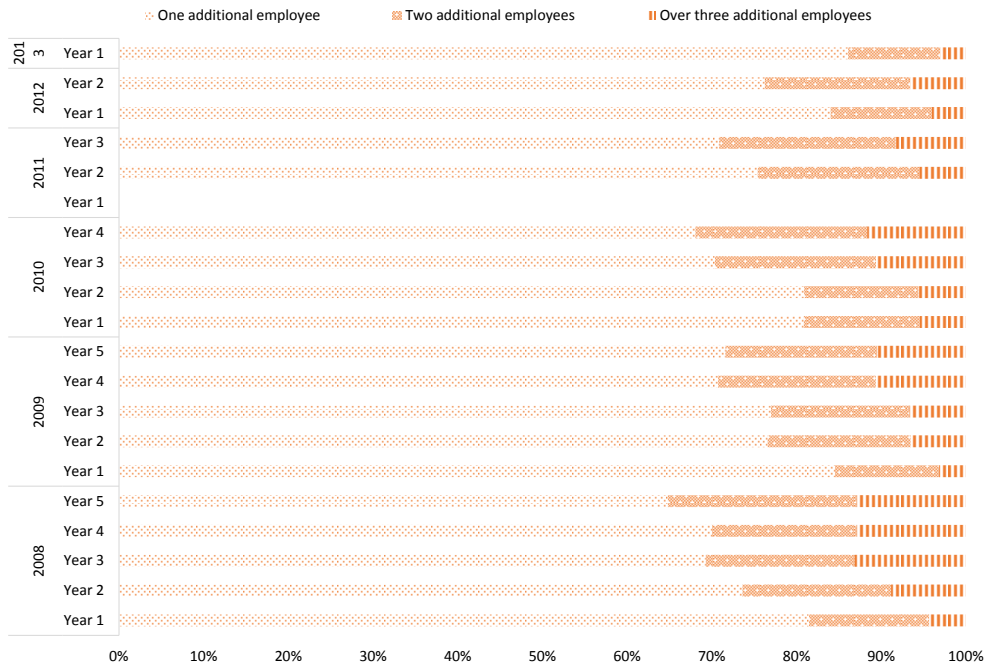
Figure 101: Breakdown of positive employment growth in Ireland in sole-proprietors by cohort and number of years after creation, 2008-2013



Source: Central Statistics Office Ireland

France

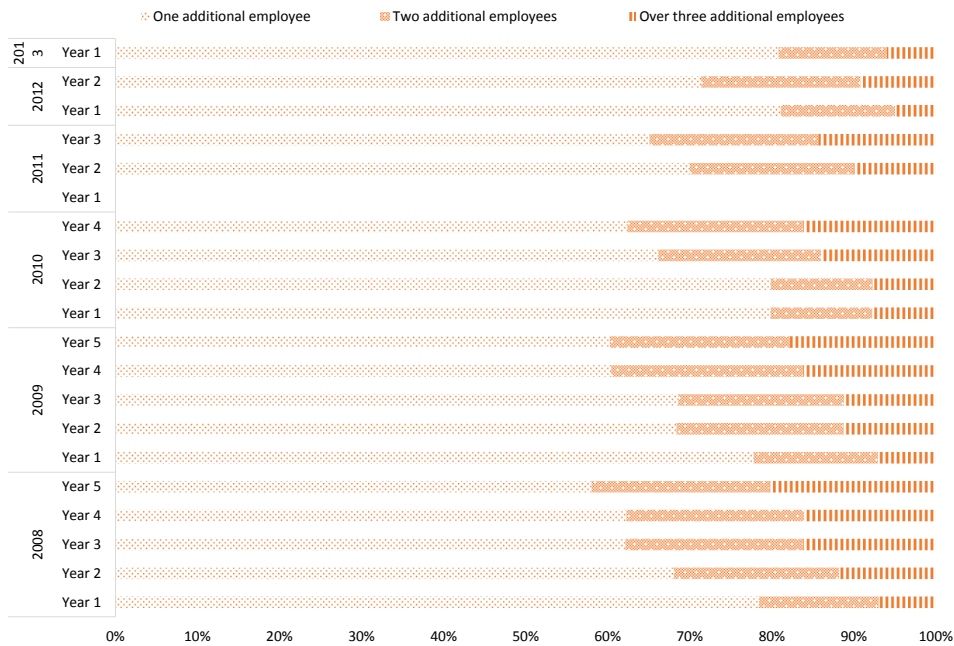
Figure 102: Breakdown of positive employment growth in France in sole-proprietors with 0 employees by cohort and number of years after creation, 2008-2013



Source: Insee France, DGFIP

Note: Employment change based on salaried employment only as data on non-salaried employment as not available. Rows without data could not be presented due to statistical disclosure control.

Figure 103: Breakdown of positive employment growth in France in sole-proprietors with employees by cohort and number of years after creation, 2008-2013

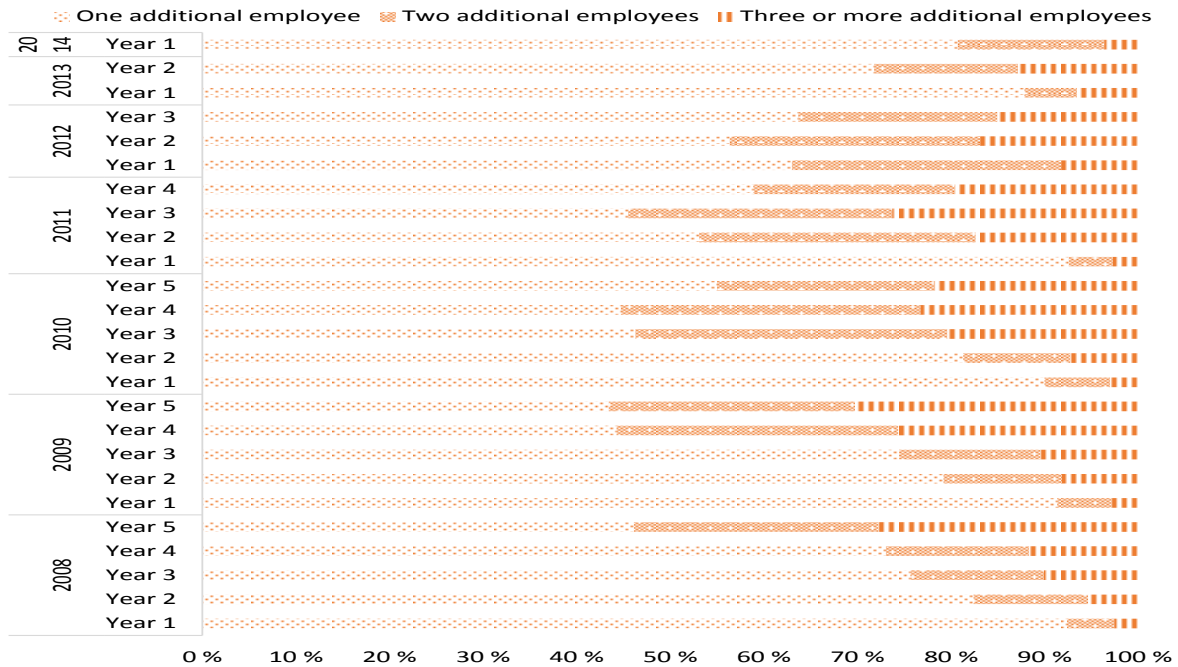


Source: Insee France, DGFIP

Note: Employment change based on salaried employment only as data on non-salaried employment as not available. Rows without data could not be presented due to statistical disclosure control.

Finland

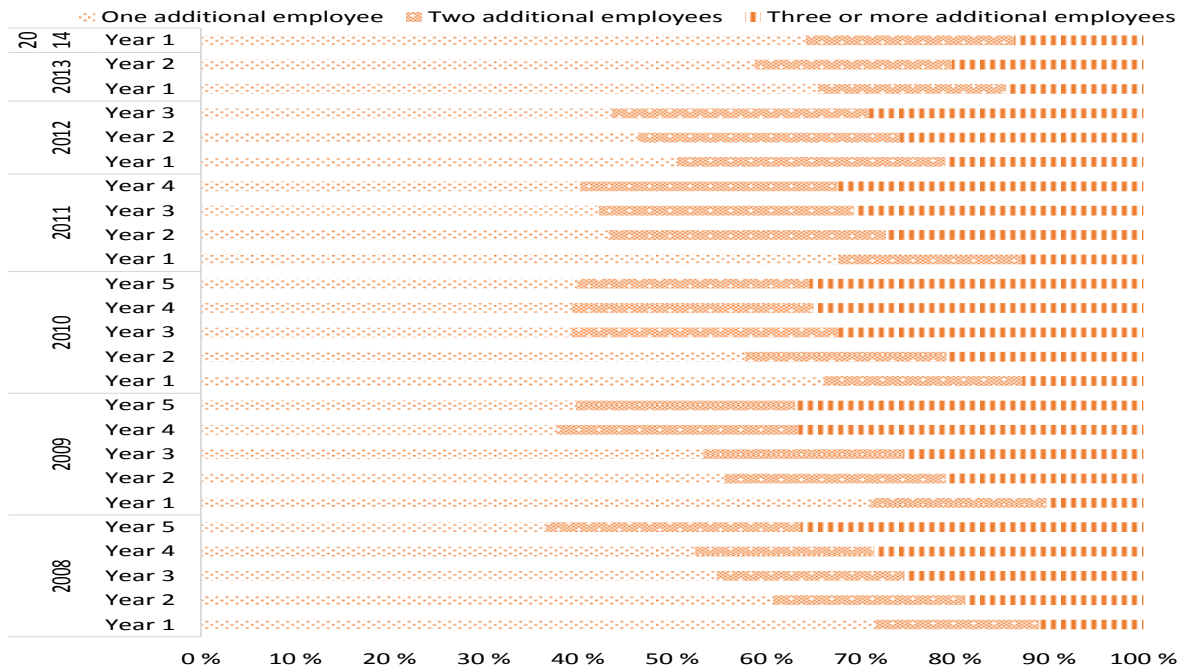
Figure 104: Breakdown of positive employment growth in Finland in self-employed firms with 0 employees by cohort and number of years after creation, 2008-2014



Source: Statistics Finland.

Note: Data for firms with "over five additional jobs" could not be included because of data confidentiality.

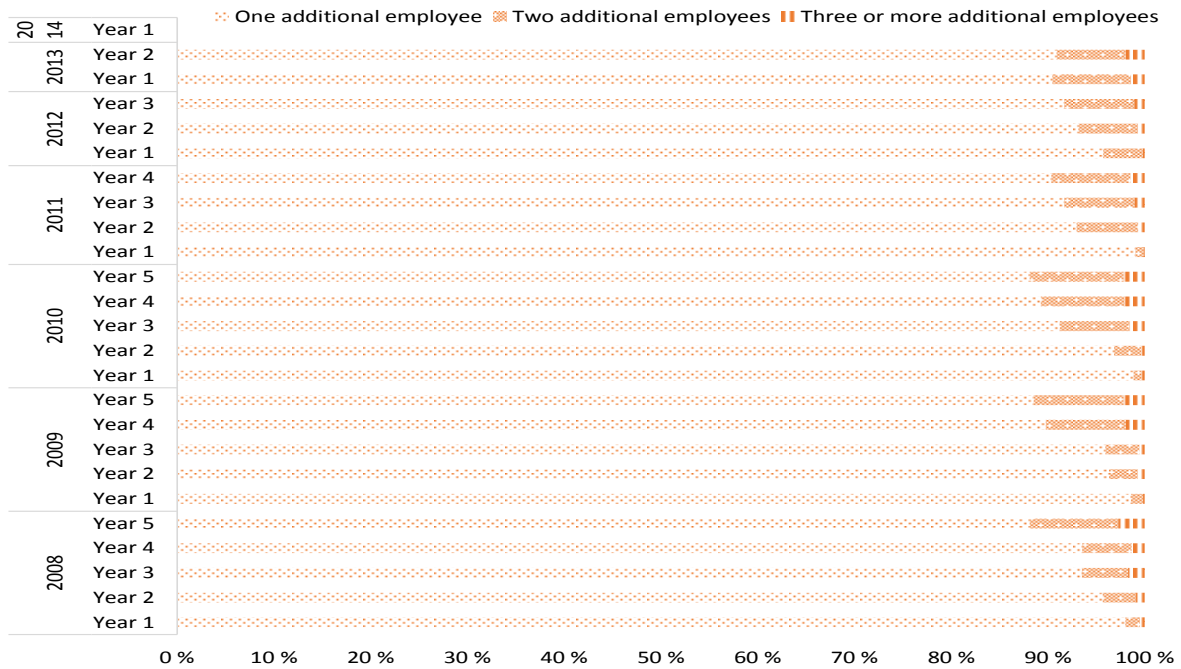
Figure 105: Breakdown of positive employment growth in Finland in self-employed firms with employees by cohort and number of years after creation, 2008-2014



Source: Statistics Finland

Note: Data for firms with "over five additional jobs" could not be included because of data confidentiality.

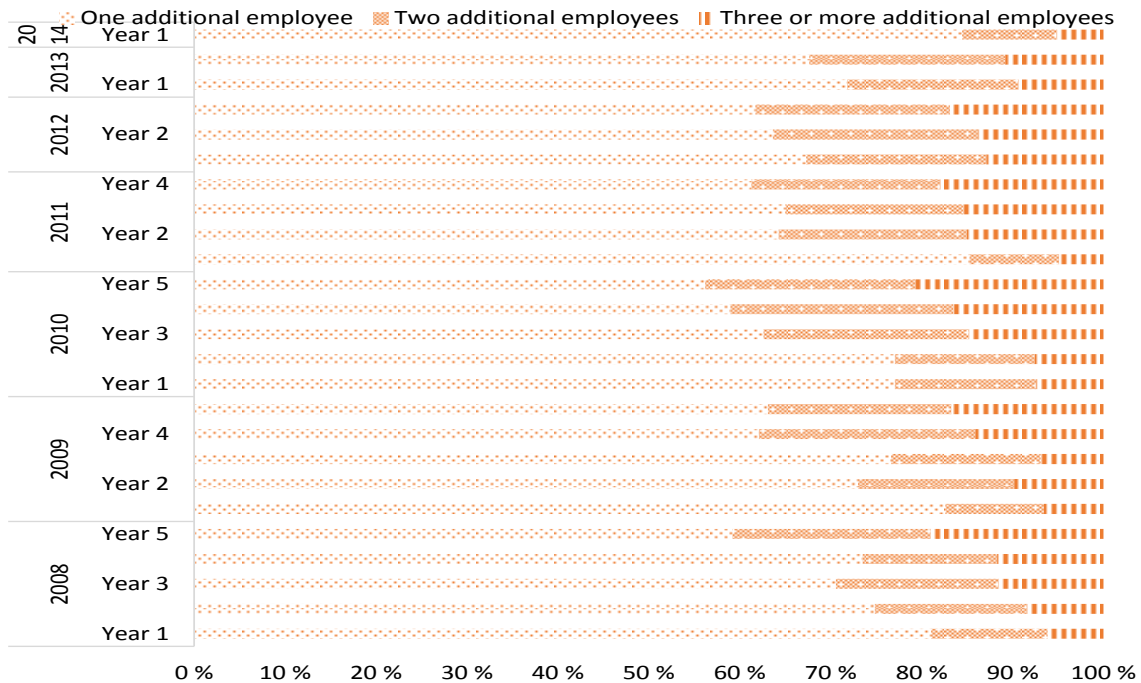
Figure 106: Breakdown of positive employment growth in Finland in sole proprietor firms with 0 employees by cohort and number of years after creation, 2008-2014



Source: Statistics Finland

Note: Data for firms with 'over five additional jobs' could not be included because of data confidentiality.

Figure 107: Breakdown of positive employment growth in Finland in sole proprietor firms with 1-5 employees by cohort and number of years after creation, 2008-2014



Source: Statistics Finland

Note: Data for firms with 'over five additional jobs' could not be included because of data confidentiality.

Lithuania

Figure 108: Breakdown of positive employment growth in Lithuania in self-employed firms with 0 employees by cohort and number of years after creation, 2008-2013

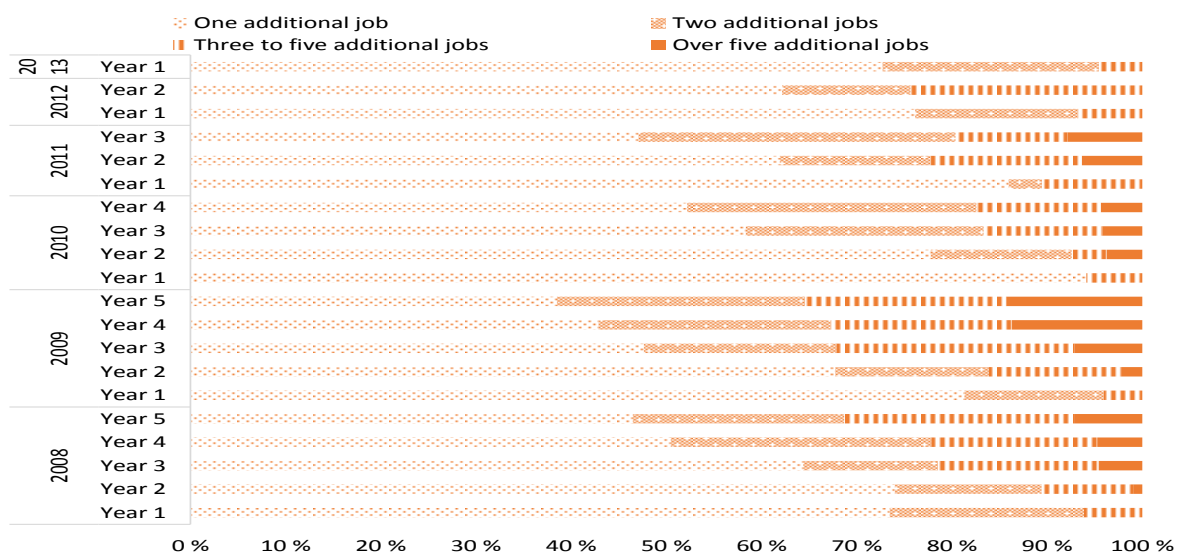
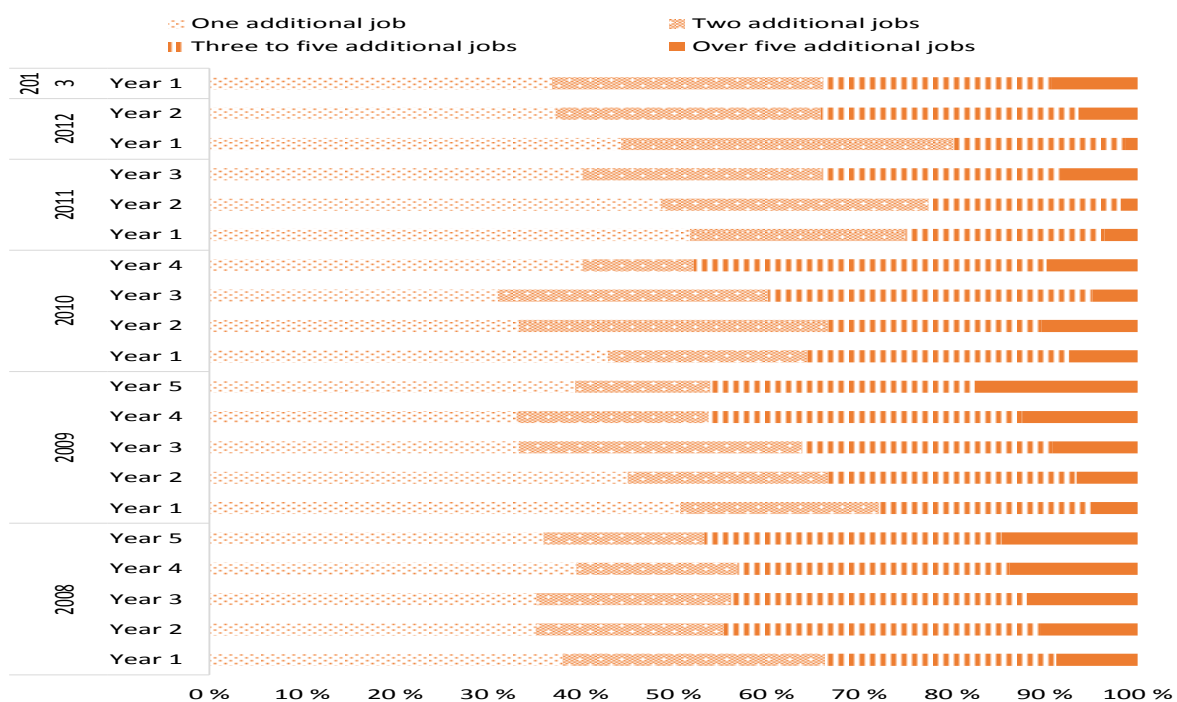
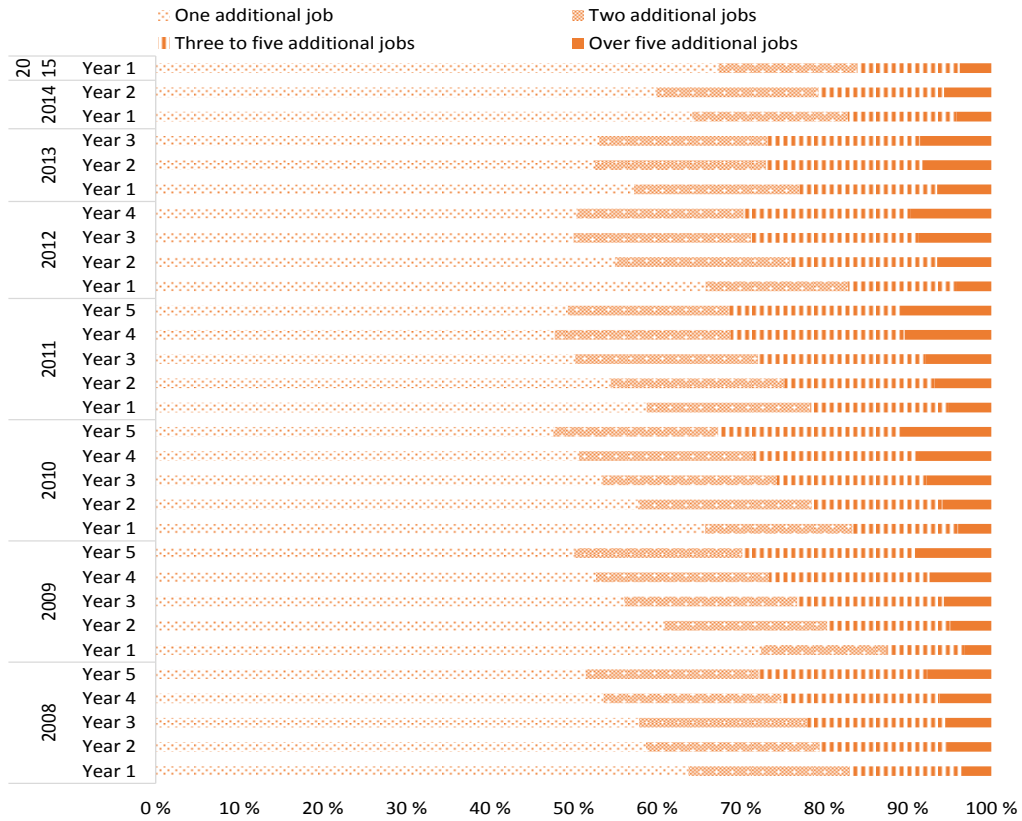


Figure 109: Breakdown of positive employment growth in Lithuania in self-employed firms with employees by cohort and number of years after creation, 2008-2013



United Kingdom

Figure 110: Breakdown of positive employment growth in the United Kingdom in sole proprietor firms by cohort and number of years after creation, 2008-2015

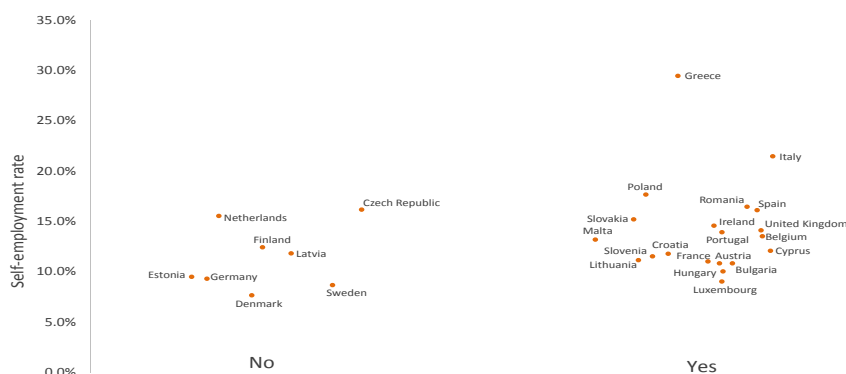


Source: UK Office of National Statistics

Note: Data for firms with 0 and with employees was combined to avoid having to remove a significant number of enterprises because of data confidentiality.

I.22. Policy measures supporting self-employment

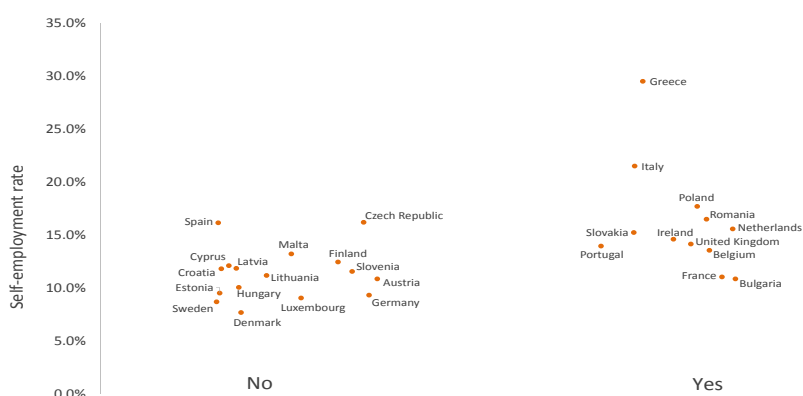
Figure 111: Existence of grants for self-employed



Source: 2016/17 SME Performance Review

Note: information was collected in the first half of 2017 and reflects the situation prevailing at that time.

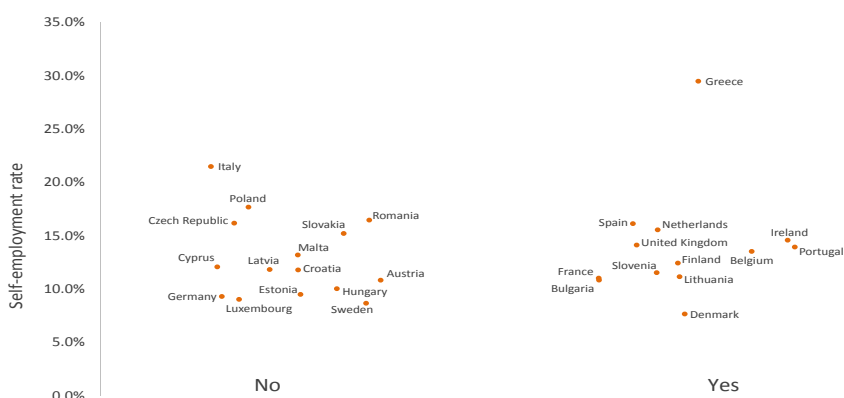
Figure 112: Existence of regulatory exemptions/derogations for the self-employed



Source: 2016/17 SME Performance Review

Note: Information was collected in first half of 2017 and reflects the situation prevailing at that time.

Figure 113: Existence of specific measures to protect the social security, healthcare and pensions of the self-employed



Source: 2016/17 SME Performance Review

Note: information was collected in the first half of 2017 and reflects the situation prevailing at that time.

Figure 114: Existence of assistance programmes for unemployed/laid-off workers to become self-employed



Source: 2016/17 SME Performance Review

Note: information was collected in the first half of 2017 and reflects the situation prevailing at that time.

Figure 115: Provision of free legal assistance for the self employed



Source: 2016/17 SME Performance Review

Note: information was collected in the first half of 2017 and reflects the situation prevailing at that time.

Figure 116: Public support for strategic coaching and mentoring for the self-employed

Source: 2016/17 SME Performance Review

Note: information was collected in the first half of 2017 and reflects the situation prevailing at that time.

ANNEX 5 ENTERPRISE BIRTHS

I.23. Enterprise births by Member State

Table 38: Share of five most important sectors in the total number of enterprise births over the period 2012-2014

MS	Sector	Share	MS	Sector	Share	MS	Sector	Share
AT	G	24 %	FI	G	21 %	PL	G	32 %
	M	21 %		M	19 %		F	17 %
	I	12 %		F	15 %		M	13 %
	F	10 %		L	13 %		C	10 %
	N	10 %		N	8 %		H	7 %
BE	M	23 %	FR	G	25 %	PT	N	34 %
	G	21 %		M	20 %		G	23 %
	F	18 %		F	18 %		M	11 %
	I	11 %		N	8 %		I	11 %
	N	8 %		I	7 %		F	7 %
BG	G	45 %	HU	G	26 %	RO	G	36 %
	M	11 %		M	18 %		M	14 %
	I	10 %		F	10 %		F	10 %
	C	7 %		N	9 %		C	8 %
	F	6 %		Kx	8 %		H	8 %
CY	G	27 %	IE	F	19 %	SE	M	26 %
	M	17 %		M	17 %		G	21 %
	I	15 %		G	17 %		F	14 %
	F	10 %		J	9 %		J	10 %
	N	8 %		I	9 %		N	8 %
CZ	G	27 %	TI	G	29 %	SI	M	24 %
	M	17 %		M	22 %		G	18 %
	C	15 %		F	15 %		F	13 %
	F	14 %		I	9 %		I	11 %
	I	7 %		C	7 %		C	10 %

DE	G	20 %	LT	G	30 %	SK	F	22 %
	M	19 %		F	22 %		G	21 %
	F	12 %		M	14 %		M	15 %
	N	10 %		C	9 %		C	15 %
	I	9 %		H	6 %		N	9 %
DK	M	21 %	LU	G	23 %	UK	M	25 %
	G	16 %		M	22 %		G	14 %
	F	13 %		F	10 %		N	14 %
	J	11 %		L	10 %		F	12 %
	N	10 %		N	9 %		J	11 %
EE	G	25 %	LV	G	27 %			
	M	17 %		M	17 %			
	F	13 %		F	12 %			
	N	11 %		C	9 %			
	C	8 %		L	8 %			
ES	G	31 %	NL	M	32 %			
	F	14 %		G	23 %			
	I	14 %		F	11 %			
	M	13 %		J	9 %			
	N	9 %		N	8 %			

Source: Eurostat

Note: B = Mining and quarrying; C = Manufacturing, D = Electricity, gas, steam and air-conditioning supply, E = Water supply, sewerage, waste management and remediation; F = Construction, G = Trade (wholesale & retail), H = Transportation and storage, I = Accommodation and food services, J = Information and communication, Kx = Financial and insurance activities except activities of holding companies, L = Real estate activities, M = Professional, scientific and technical activities, N = Administrative and support service activities. Croatia, Greece and Malta excluded due to missing data.

Table 39: Share of main ICT sectors in total number of enterprise births over the period 2012-2014

	ICT manufacturing	ICT services	ICT wholesale	Online retail trade
AT	0.1 %	5.7 %	0.2 %	2.1 %
BE	0.1 %	5.8 %	0.3 %	1.3 %
BG	0.0 %	3.1 %	0.2 %	2.3 %
CY	0.0 %	4.5 %	0.5 %	0.9 %
CZ	0.1 %	2.2 %	0.1 %	0.4 %
DE	0.2 %	4.6 %	0.1 %	2.2 %
DK	0.1 %	4.2 %	0.3 %	1.3 %
EE	0.1 %	6.5 %	0.3 %	4.0 %
ES	0.0 %	3.0 %	0.1 %	0.4 %
FI	0.1 %	5.2 %	0.2 %	5.1 %
FR	0.0 %	5.5 %	0.2 %	3.5 %
HU	0.1 %	5.4 %	0.2 %	3.4 %
IE	0.1 %	3.5 %	0.1 %	1.0 %
IT	0.1 %	3.1 %	0.2 %	1.0 %
LT	0.0 %	2.7 %	0.1 %	3.1 %
LU	0.0 %	7.5 %	0.5 %	1.8 %
LV	0.1 %	6.3 %	0.6 %	3.1 %
NL	0.1 %	7.6 %	0.3 %	7.9 %

PL	0.1 %	5.1 %	0.2 %	4.5 %
PT	0.0 %	1.9 %	0.1 %	1.1 %
RO	0.0 %	7.0 %	0.2 %	2.3 %
SE	0.1 %	7.9 %	0.3 %	5.1 %
SI	0.1 %	5.7 %	0.2 %	2.6 %
SK	0.1 %	4.1 %	0.0 %	4.0 %
UK	0.1 %	9.1 %	0.2 %	2.3 %

Source: Eurostat

Note: Croatia, Greece and Malta excluded due to missing data.

ANNUAL REPORT ON EUROPEAN SMEs 2016/2017

Focus on self-employment



ISBN 978-92-79-74126-5

ISSN 2467-0162

doi: 10.2873/742338

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