JIELD - Jobs Indicators on Enterprise Level Data Project Report

World Bank

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Executive Summary

JIELD tests a systematic approach to provide Jobs Indicators on Enterprise-Level Data (JIELD). The project was designed to help address the problem of scarce firm level indicators and data on job dynamics. It tries to raise awareness regarding the potential of firm-level data for the jobs agenda. Improving our knowledge of labor markets and the roles of firms for the job dynamics is crucial. Most analyses of labor market challenges focus on the supply side. They investigate the characteristics of individuals which seem to affect their employability and labor market outcomes. The focus on supply side issues and outcomes often results from a lack of data on the demand side of the labor market. However, providing this information that is typically lacking or scarce can benefit the design of policies to promote private sector job creation and productivity growth. The project focuses on firms in the ECA region as a starting point and works with ORBIS firm data for the period of 2007-2013. ORBIS is a dataset that contains information on nearly 150 million companies worldwide, with an emphasis on private company information. The final subsample of ORBIS used in this project covers almost 600,000 firms spread around 24 countries in the ECA region. Understanding the forces behind the lack of dynamism of the labor markets in ECA and their links with macroeconomic performance are essential for better job strategies and policies. Therefore, the analytical outputs from projects such as JIELD can eventually also support WBG operations and the policy dialogue with ECA countries.

JIELD's main indicators focus on employment, productivity, and labor costs (wages) and are complemented by a set of firm specific explanatory variables. The indicators are harmonized across countries and inform about firms' net job creation as well as the relationship between firm's labor productivity and labor costs. They enable country and inter-temporal comparisons with respect to absolute levels and growth. The firm specific explanatory variables feature information on firm size, firm age, sector of activity, debt-equity, capital or ICT intensity, trade, firm location, ownership, market concentration, or management characteristics.

Clear patterns emerge when looking at the determinants of employment levels and employment growth as well as labor productivity and wage growth. With respect to age**,** older firms typically employ more workers but it is the younger firms that contribute more to employment. Employment growth is stronger for firms in services but firms in industry are bigger than in agriculture and the service sector. Firms that use external finance show increased employment levels and growth. Firms in sectors with lower capital or ICT intensity have on average higher employment levels but employment growth is significantly stronger for firms in ICT-intense sectors. Firms in tradeable sectors are on average employing more workers than firms in non-tradeable sectors. Firms based in the capital city seem to contribute slightly more to employment growth. With respect to ownership, foreign and public owned firms employ more workers and contribute slightly more to employment growth. Firms in industries with higher market concentration tend to show higher average employment levels but also growth than firms in industries with higher market concentration. Looking at labor productivity and wage growth, younger firms contribute disproportionately to labor productivity and wage growth. Regarding size, the larger firms are, the higher are their levels of labor productivity and wage growth. The use of external finance is positively associated with wage and productivity growth. While ICT intensity is accompanied by both higher wage and labor productivity growth, capital intensity per se translates only into higher labor productivity growth – not wage growth. Firms in tradeable sectors experience higher labor productivity growth than firms in non-tradeable sectors. Firms in the capital city tend to exhibit lower rates of wage growth than firms

outside the capital. Regarding ownership, foreign firms experience higher labor productivity and wage growth than domestic firms that are privately owned. There is also indication for gender barriers to female owned or led firms, as firms that have a board with a female majority experience substantially lower labor productivity growth than those with a male majority.

Important findings can also be drawn from the employment patterns along the life cycle of firms as well as their success as measured by growing, stagnant or shrinking employment. On average, firms in the sample tend to grow their number of employees during the first 11 years since entry, they then start to shrink. With respect to firm growth or survival, the sample only allows to look into firms that remain in the market throughout the 2007-2013 period rather than also including firm exit and entry. Given this caveat we see that for those firms, there is substantial cross-country variation in terms of the share of growing firms across countries. Also, capital intensity does not seem to affect firm growth in most countries. In contrast, sectors with low ICT intensity tend to feature more firms with shrinking employment. Furthermore, in most countries, growing firms pay higher wages. An important finding as the impacts of job creation on poverty mitigation and shared prosperity would not be sustainable or substantial if these additional jobs were created in unproductive activities with low wages. JIELD also confirms literature on gender inequalities on the firm level. The evidence shows that firms with a female majority board are systematically at a disadvantage which reflects in their growth.

Which firms create more *and* better jobs? Across most countries, young firms make the largest contributions to employment, productivity and wage growth. However, it is not the most productive firms that contribute the most to job creation, a finding that raises concerns about the lack of creative destruction in the region covered by the sample. There is some evidence that strict Employment Protection Legislation (EPL) hampers firm growth. Strict EPL for both permanent and temporary workers seem to hurt more medium-size firms' growth prospects disproportionately when compared to smaller and larger firms within the region. Particularly, the role of young firms seems to be hampered by EPL. JIELD shows that young firms contribute less to job creation in countries with strong EPL for permanent workers.

While the underlying data used to construct JIELD have a number of advantages over existing datasets[1], they also have a number of drawbacks with respect to firm censuses or surveys. First, as described in this report, the data are not necessarily representative of the whole universe of firms. For example, while the ORBIS dataset is highly representative of the universe of firms in some countries such as Romania, in most countries the sample does not provide a good coverage of small or micro firms. Second, the dataset is not well suited to measure firm entry and firm exit. Finally, while it is continuously expanding to include more countries in the sample, it is still biased toward high and middle-income economies. Thereby, JIELD should be considered as a pilot toward the goal of starting the process of firm-level data collection and harmonization across countries. This is important since, in contrast to the case of household and individual-level datasets, there are no large-scale harmonized firm-level datasets covering a large number of countries. More specifically, while several World Bank initiatives were successful at collecting, harmonizing and disseminating household expenditure, income and labor market surveys – such as I2D2,

[1] **In particular with respect to the cross-country harmonization and the short time span between data recording and dissemination.**

LABLAC, ECAPOV, etc. – no similar products exist for large-scale firm-level data. One exception are the World Bank Enterprise Surveys, but their sample size is too small to conduct in-depth country studies.

1. Background and Motivation

Identifying firms' barriers to grow is crucial for the design of policies to foster job creation. The goal of this work is to create and provide indicators and visualizations on jobs dynamics using enterprise level data to inform the policy agenda around Job creation and Development. It builds upon a systematic approach to provide Jobs Indicators on Enterprise-Level Data (JIELD). This helps address the problem of scarce firm level indicators and data on job dynamics. Most harmonized labor market indicators covering a large set of countries are typically based on labor force surveys, LSMS or administrative records of individuals. In other words, most harmonized labor market indicators tend to focus on the supply side of the labor market while largely ignoring the demand side. This report attempts to fill this gap by developing a dataset of labor market indicators based on firm-level data. While JIELD can eventually lead to a global public good usable in different regions and countries, this report pilots the indicators for ECA countries with the intention of extending it to other regions in the future.

The outcomes of this work align directly with the twin goals of the World Bank. As shown by several empirical studies, income from labor has been the main driver of poverty reduction and shared prosperity in most countries.[2] Thereby, improving our understanding of the prevalence and incidence of both job creation and destruction in the private sector as well as their drivers and obstacles will inform policy recommendations for reducing poverty and boosting shared prosperity. JIELD can provide information and help understand firm dynamics regarding jobs outcomes for policies leading to more, better, and inclusive jobs.

Most analyses of labor market challenges focus on the supply side. They investigate the characteristics of individuals which seem to affect their employability and labor market outcomes. The focus on supply side issues and outcomes often results from a lack of data on the demand side of the labor market. Moreover, even when such data is available for a given country, there are often issues of accessibility or comparability. Particularly for analysis across economies, comparability issues often hinder cross-country analysis and benchmarking. A systematic approach to indicator generation as suggested by JIELD can help fill this gap. It can provide information that is typically lacking or scarce for the design of policies to promote private sector job creation and productivity growth.

Improving our knowledge of labor markets and the roles of firms for the job dynamics in ECA is crucial. It took many years for labor market outcomes in ECA to return to the pre-crisis levels. Understanding the forces behind the lack of dynamism of the labor markets in ECA and their links with macroeconomic performance are essential for the outline of labor market policies. Since JIELD is representative of the sectoral and size distribution (for firms with 10 employees or more) of firms in most countries, it can be used to inform country-specific analytical work as well as to draw lessons from cross-country comparisons. For some of the countries included in the indicator set, there is no public access to recent micro-data from

[2] See, for instance, Inchauste, Gabriela; Azevedo, João Pedro; Essama-Nssah, B.; Olivieri, Sergio; Van Nguyen, Trang; Saavedra-Chanduvi, Jaime; Winkler, Hernan. 2014. Understanding Changes in Poverty. World Bank Group, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/19445 License: CC BY 3.0 IGO

enterprise surveys and even labor force surveys or other household surveys. Accordingly, even though micro-data access is good for several ECA countries, there is usually a significant time lag between the time of the data collection and the time that the data becomes publicly available. JIELD can address this issue by providing and organizing data that is not only unique, but also more up-to-date than most of the existing public sources. Furthermore, the higher-frequency nature of JIELD enables new and better economic analyses including, for instance, reports on job trends.

The database will not only be useful for analytical outputs but also for WBG operations and the policy dialogue with ECA countries. WBG products such as SCDs or CEMs require data as recent as possible not only for the country in focus but also for regional country comparisons or benchmarks. The approach devised for this work could provide a pathway to this usually hard to fulfill demand of country teams and also be shared with counterparts.

The positive externalities of JIELD include raising awareness regarding the potential of firm-level data for the jobs agenda. The systematic analysis of demand side data can improve our knowledge on job creation and destruction in labor markets of client countries. In parallel to the WB's Jobs Diagnostic work, analyzing this type of data also creates knowledge regarding issues of processing and harmonizing firm-level data. This knowledge could be shared both internally and externally to address data challenges and shortcomings and lead the way to increasingly better analytical outcomes.

The ECA region is only the starting point. JIELD has the potential to be expanded to other regions, since the main data source of this project also covers a few economies outside ECA (with increasing country coverage over time). Moreover, other sources of firm-level data such as comprehensive enterprise surveys or firm censuses become increasingly available. These could potentially be harmonized and incorporated into JIELD or form part of the WB Jobs diagnostics. Such extensions could be part of future roll-out activities after a successful pilot in the ECA region.

2. Data

To close the gap on firm-level indicators on jobs dynamics JIELD innovates on different levels. First, it taps new higher frequency data sources, adopting new ways of processing and organizing the data. Second, it explores latest research on firm level data analysis and tests and experiments with new methodologies to generate indicators that are relevant for understanding firm dynamics that affect jobs outcomes. Third, it adopts new approaches for data visualization to help users access and interpret Jobs Indicators on Enterprise Level Data.

2.1. Orbis data

The micro-data that was used to produce the indicator database for JIELD is ORBIS. ORBIS contains information on nearly 150 million companies worldwide, with an emphasis on private company information.[3] While the information provided through ORBIS is vast, it requires comprehensive cleaning, organizing, validating, and harmonizing of variables to be useful.

[3] For more information on ORBIS, please see http://www.bvdinfo.com/en-gb/our-products/company-information/international-products/orbis

Since the ORBIS dataset is not a census or a survey, the estimation of statistics and econometric models using this micro-data is not straightforward. The national universe of firms covered in ORBIS varies across countries. This affects the extent to which the data is representative of the economy in the respective country. In some cases, such as Romania, ORBIS covers more than 90 percent of formal firms with more than 5 employees. In others, such as Germany, the coverage is much lower. To increase the degree of representativeness of the sample, we re-weight the firms using the structure of firms by size and sector available from census of firms such as in Eurostat. Accordingly, specific methodologies needed to be devised as the data on data firm entry and exit does in many cases not allow a distinction between the creation of a new firm and the fact that a firm may just have started to report financial statements. Likewise, a firm can drop out of the database either because it exited the market or because it just stopped reporting statements. To account for this limitation of the data, we initially restricted the analysis to a balanced panel of firms (by different sub-periods) and used weights to make the sample representative in terms of sectoral and size representativeness.

One important limitation of ORBIS is that informal firms are not included. This limitation of the JIELD pilot has to be clearly marked. In subsequent projects, we plan to analyze to what extent this exclusion introduces a bias in JIELD by making comparisons with other data sources.

Despite the focus on formal enterprises, demand side data availability through ORBIS is very promising. The list of countries that are featured in the database is quite extensive and it is constantly expanding to include more developing economies.[4] Moreover, the information contained in the dataset is periodically updated not only to include more recent information but also more countries. As of September 2017, ORBIS contains firm-level financial statements of firms for the year 2015. However, this version of JIELD uses the ORBIS dataset downloaded in 2015, thereby the most recent firm-level data is for 2013.

2.2. Representativeness analysis/quality checks

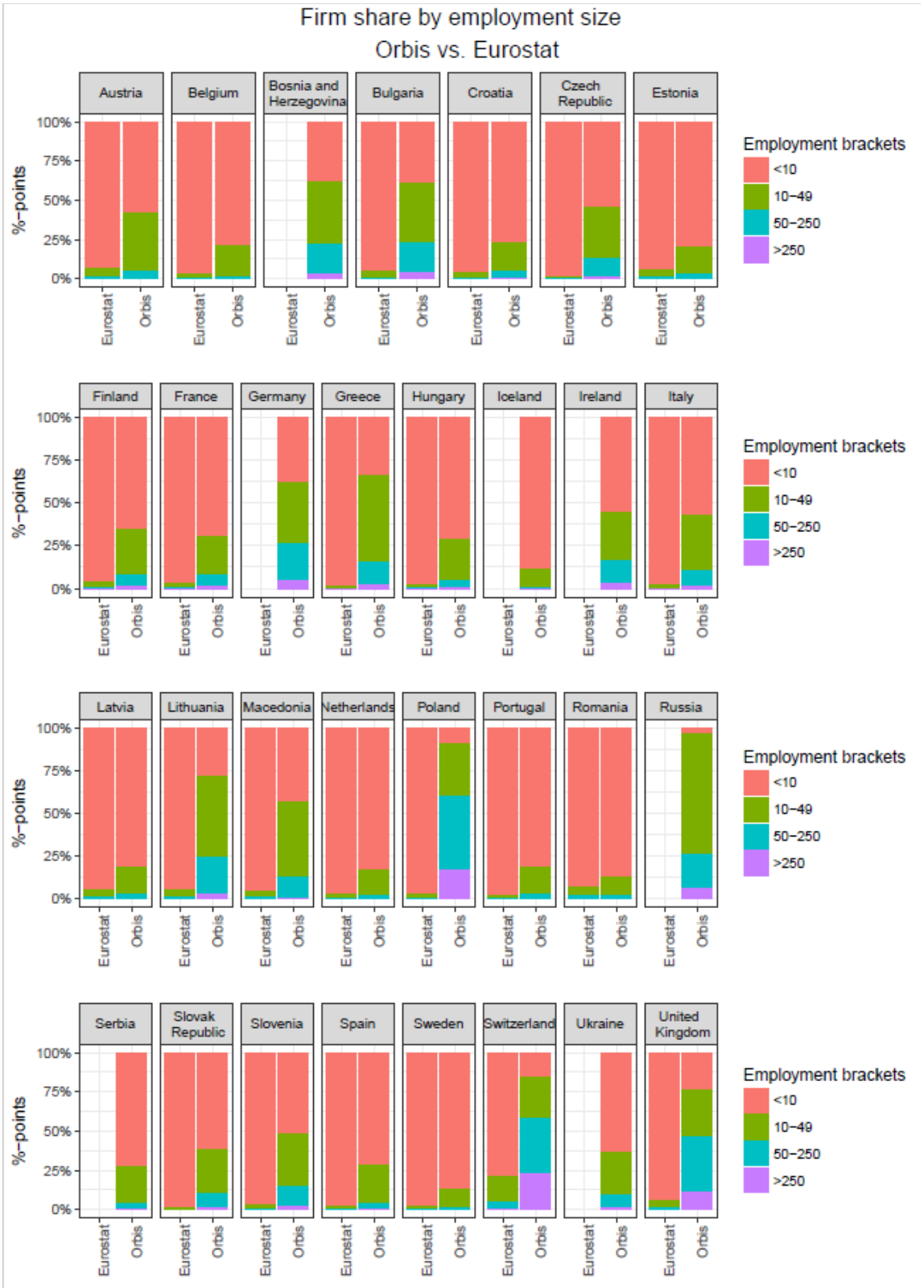
This section examines whether the ORBIS dataset is representative of the universe of firms in each country. To do so, it compares the sectoral and size structure of firms against those reported by Eurostat, which reflect the actual composition of firms in each country. Unfortunately, it is not possible to carry out this analysis for all the countries in ORBIS, since not all of them are covered by Eurostat.[5]

In general, micro firms tend to be underrepresented in ORBIS. While firms with 9 employees or less represent the vast majority of firms in every country, their share of total firms is much lower in ORBIS across most countries (Figure 1). However, there is substantial variation across countries. Micro firms are fairly represented in the ORBIS data for the Netherlands, Portugal, Romania and Sweden. In contrast, they are significantly underrepresented in the ORBIS data for Poland, FYR Macedonia and the United Kingdom. Given that smaller firms tend to be even more prevalent among less developed economies, it is likely that micro firms are severely underrepresented in the ORBIS data for Bosnia-Herzegovina, Russia, Serbia and Ukraine.

[4] The list of countries with firm-level (publicly listed and unlisted) include Austria, Belgium, Bulgaria, Bosnia-Herzegovina, Czech Republic, Germany, Spain, Estonia, Finland, France, UK, Greece, Croatia, Hungary, Ireland, Italy, Lithuania, Latvia, Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Sweden and Ukraine. Firm-level data for publicly listed firms is available for all the countries in the world.

[5] These countries are Bosnia-Herzegovina, Russia, Serbia and Ukraine.

Figure 1: ***Size composition of firms, Orbis vs. Eurostat***



When excluding micro firms from the analysis, the size structure of firms in the ORBIS data is fairly close to the actual distribution. In most countries, the fraction of firms by number of employees in the ORBIS dataset is very similar to that of Eurostat when restricting the sample to firms with 10 or more employees (Figure 2). The fraction of firms in the 10-49, 50-249 and 250-or-more-employees brackets are very similar in the ORBIS and Eurostat datasets, particularly in Bulgaria, FYR Macedonia, Slovak Republic and Slovenia. In contrast, small firms with 10 to 49 employees still are underrepresented in the truncated ORBIS sample for Poland, Switzerland and the UK.

The sectoral structure of firms in ORBIS is fairly similar to that of the universe of firms. In general, the fraction of firms by sector is very similar across both datasets. However, the manufacturing sector tends to be slightly overrepresented in the ORBIS data. In Romania and Croatia, for example, the fraction of firms in each sector across both datasets lie along the 45 degree line, with the exception of firms in the Accommodation and Food sector in Croatia, which tend to be slightly underrepresented in ORBIS. In Poland and Bulgaria, Wholesale and Retail Trade and Professional activities tend to be underrepresented in the ORBIS data.

In summary, since micro firms are underrepresented in ORBIS, caution is needed when interpreting any statistics estimated using the dataset. On the other hand, ORBIS provide an accurate picture of the sectoral structure of firms in most countries. Moreover, when restricting the sample to firms with 10 or more employees, the size structure of firms in ORBIS is very similar to that of the universe of firms across most countries.

Figure 2: ***Size distribution of firms with 10 or more employees, Orbis vs. Eurostat***

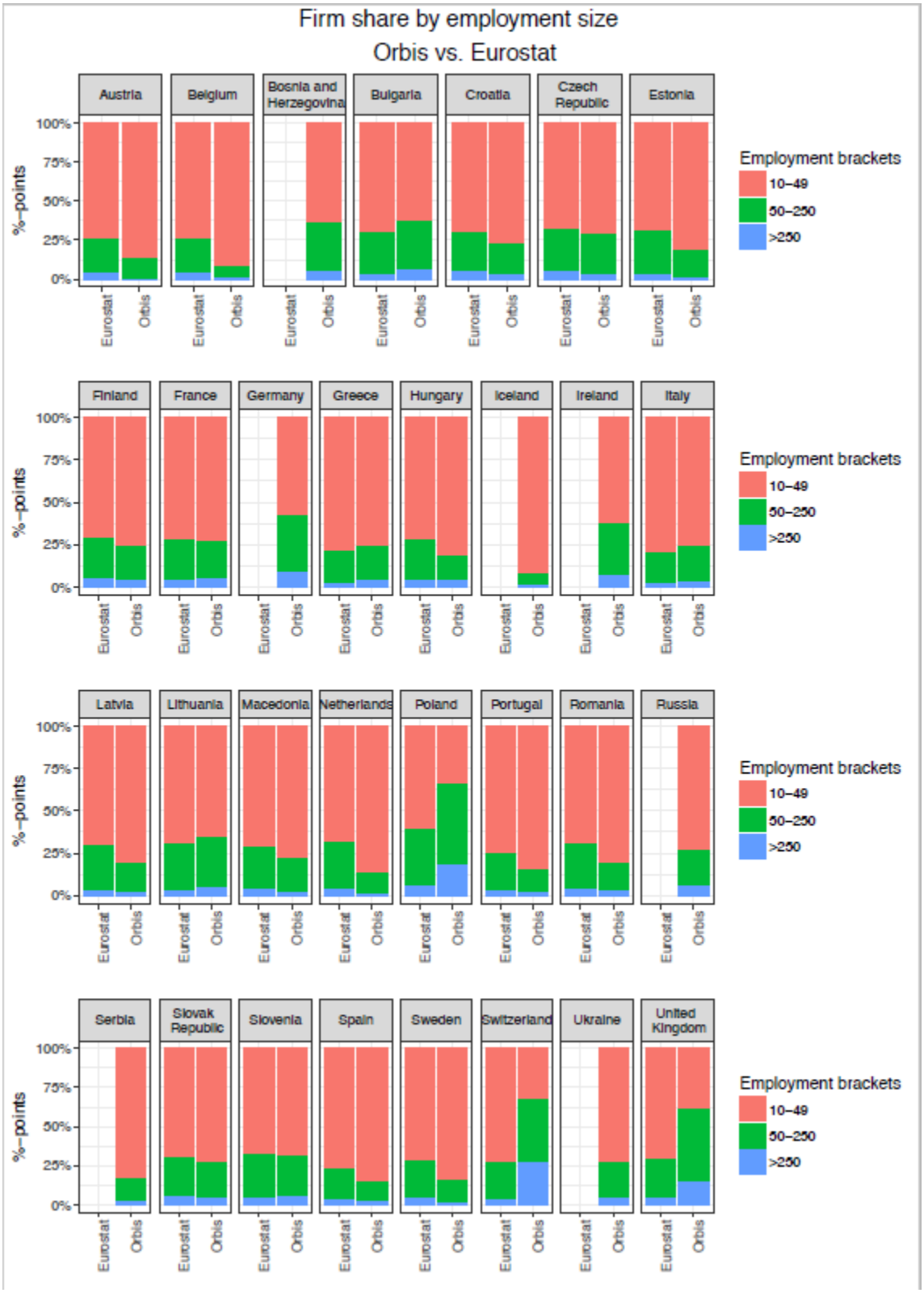
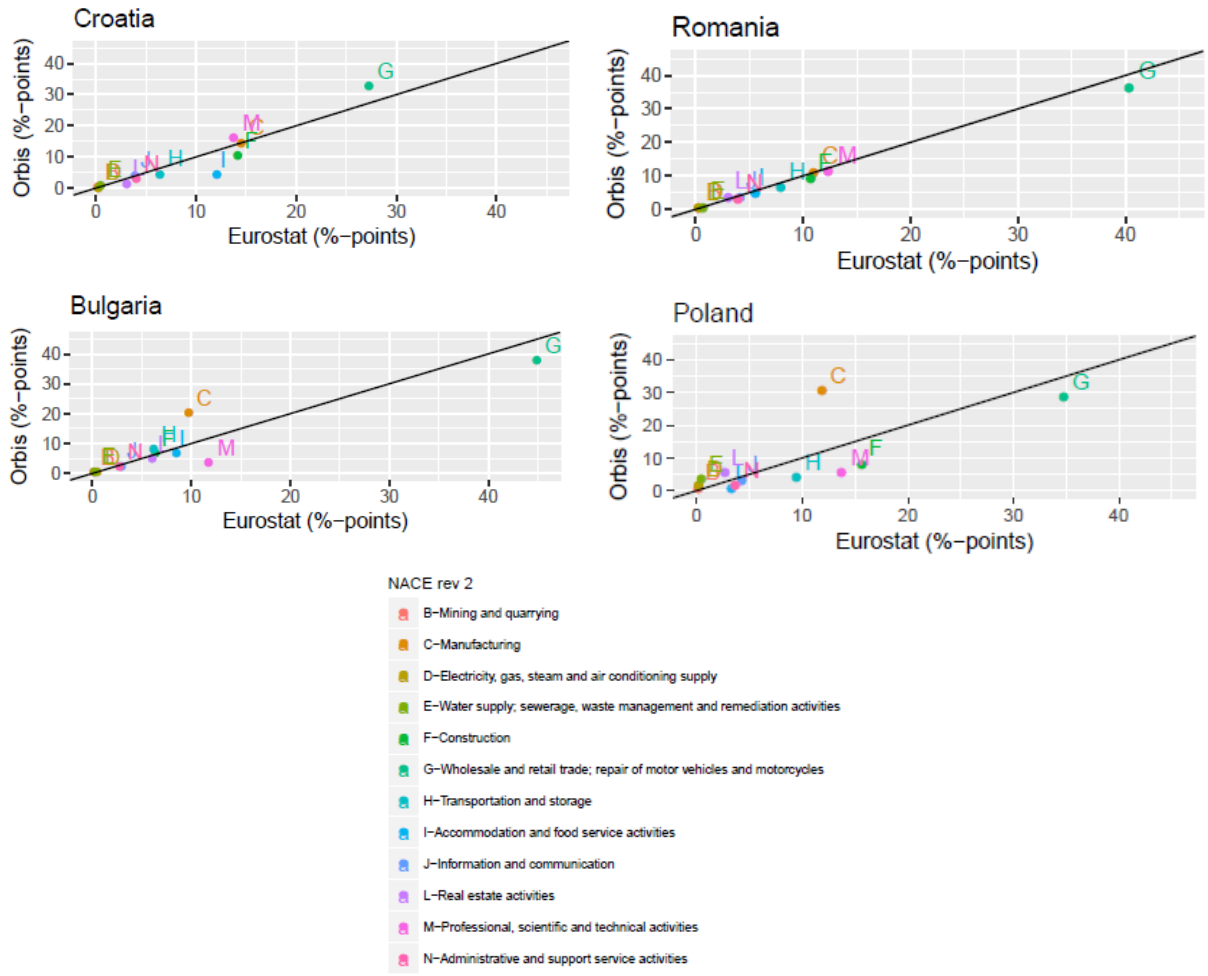


Figure 3: ***Sectoral structure of firms, ORBIS vs. Eurostat (selected countries)***



3. Enterprise level jobs indicators

Indicators on employment, productivity, and labor costs (wages) are the focus of the analysis. They provide information of firms' net job creation as well as the relationship between firm's labor productivity and labor costs. They thereby cover the essential dimensions in the policy discussion on firms and jobs. To enable a comparison between countries and over time, all indicators are harmonized across countries. The indicators are provided in absolute levels and annual growth percentages per country and for country income aggregates. Using the ORBIS firm data, the three main indicators are defined as:

- **Employment**: Number of employees per firm
- **Labor Productivity**: Value Added per worker calculated as total firm sales divided by the number of employees
- **Labor Costs /Wages**: Total cost of employees over number of employees per

To better characterize firms and their activities, JIELD complements the three main indicators with a set of firm specific explanatory variables. We estimate different statistics related to the distribution of the variables, their structure and growth by each of the following dimensions:

- **Size of the firm**
  Average employment in firm size over period of analysis in one of four size bins (<10; 10-49; 50-249; >249 employees)

- **Age of the firm**
  Date of foundation of firm in three age categories (before 1990; 1990-2000; after 2000)

- **Sector of activity**
  Based on 2 digits ISIC classification of firm (Agriculture (01-03); Industry (5-43); Services (Other))

- **Debt-equity ratio** (External finance use/structure)
  Firm below or above country median of current liabilities over total assets (median; High or Low)

- **Sectoral capital intensity (KLEMS)**
  Firm below or above median sectorial capital intensity on 2 digits ISIC industry and country level (median; High or Low)

- **Sectoral ICT intensity (KLEMS)**
  Firm below or above median sectorial ict intensity on 2 digits ISIC industry and country level (median; High or Low)

- **Tradeables**

  Firm in global tradable or non-tradable sector based on 2 digits ISIC sector level assignment

- **Capital city**
  Address information indicates firm is based in capital of country (Yes or No)

- **Global ownership**
  Ultimate global ownership of firm (domestic private, domestic public, or foreign)

- **Market concentration in industry**
  Firm below or above median of Herfindahl Index on 2 digits ISIC industry and country level (high or low)

- **Female board majority**
  Majority of board members are female (Yes or No)

- **Age of management**
  Average age of board members of firm in three age bins (<39; 40-49; >49 years)

Determinants of Employment Levels and Employment Growth

Older firms employ more workers on average but younger firms contribute more to employment growth. Firms established before 1990 employ on average more workers than firms established between 1990 and 2000 (23 out of 27 countries) and firms established between 1990 and 2000 employ on average more workers than firms established after 2000 (24 out of 27 countries). This pattern holds when controlling for further employment determinants.[6] However, the opposite can be observed when looking at employment growth. Younger firms contribute more to employment growth than old firms do.

In terms of average employment size, firms in industry are bigger than in agriculture and the service sector but employment growth is stronger for firms in services. These overall regression results underline the rising role of services in employment in recent years. On a country level without further controls, firms in services employ on average fewer workers than firms in industry (26 out of 27 countries). With respect to agriculture, this difference is less striking. In 16 out of 27 countries service firms employ on average more workers than those in agriculture. However, controlling for other variables, employment levels are significantly lower for firms in services compared to agriculture (Appendix 1, Table 4 and

[6] Section 4.1 describes the methodology behind the OLS estimates

Table 5).

The use of external finance increases employment levels and growth. Firms with higher than median debt-equity ratios show significantly higher employment levels and growth than those with a ratio below the median. This finding highlights the role of access to (external) finance. This important relationship is less clear when looking only at the descriptive debt-equity ratio indicator on a country level without controls. There a mixed pattern applies with only 14 out of 27 countries having higher employment levels

Firms in sectors with lower capital or ICT intensity have on average higher employment levels but employment growth is significantly stronger for firms in ICT-intense sectors. In contrast, employment growth is significantly smaller for firms with lower capital intensity. While the finding on the role of capital intensity may be less surprising, ICT seems important for ongoing and future shifts in employment patterns. 22 out of 27 countries show higher employment for firms in sectors with lower capital intensity. However, all of the 27 countries in the analysis have on average lower employment levels for firms in sectors with high ICT intensity. The growth in employment within these firms points at their rising relevance but the outlook could be less positive for workers if the pattern persists and these firms lower average employment levels overall.

Firms in tradeable sectors are on average employing more workers than firms in non-tradeable sectors. However, no significant relationship can be observed with respect to the contribution of these firms to employment growth. The role of firms in tradeable sectors on average employment can also be seen on the country level without controls. On a country level, more than two thirds (70 percent) of the 27 countries in the analysis have higher employment with firms in tradeable sectors.

Hinting at the role of urban centers, firms based in the capital city seem to contribute slightly more to employment growth[7]. Employment growth appears to be slightly higher for firms in the capital city compared to firms outside the capital. This may be linked to overall urbanization trends that the regression cannot control for on the firm level. It points of the need to further investigate the relationship between urbanization (incl. secondary cities), firms, and their employment.

Foreign and public owned firms employ more workers and contribute slightly more to employment growth. Looking at ultimate firm ownership, the comparison between foreign and domestically owned but also public and private firms, underlines the role of foreign owned as well as government owned firms for both average employment levels and growth. On a country level, foreign firms employ on average more workers than private domestic firms (26 out of 27 countries). Furthermore, in domestic public sector owned firms employment is typically higher than in private domestic (25 out of 27) and foreign firms (20 out of 27).

Firms in industries with higher market concentration tend to show higher average employment levels but also growth than firms in industries with higher market concentration. Controlling for other firm related variables, market concentration does have an effect on the employment patterns of firms. The finding that firms in industries with higher market concentration as measured by the Herfindahl Index

[7] Regarding firm location, the dataset only provides information on whether a firm is located in the capital city.

normalized by sector and time revenues points at the overall beneficial contribution of market concentration and, potentially, competition for employment.

Determinants of Labor Productivity and Wage Growth

Younger firms contribute disproportionately to labor productivity and wage growth. Firms established after 2000 experience on average an 0.8% additional annual growth in labor productivity and wages per worker than those born before 1990. To some extent, this could reflect the fact that younger firms are in more dynamic sectors than their older counterparts, which could be in more traditional activities.

The larger the firm, the higher the levels of labor productivity and wage growth. Firms with 250 employees or more grow an additional 5 and 3 percentage points annually in terms of labor productivity and wages, respectively, than firm with less than 10 employees. Both productivity and wage growth increase with the number of employees in the firm. However, the increase in productivity growth is steeper than that of wages, which may suggest that productivity gains are less likely to translate in wage growth among larger firms.

The use of external finance is positively associated with wage and productivity growth. Firms with higher than median debt-equity ratios show significantly higher levels of labor productivity and wage growth than those with a ratio below the median.

While ICT intensity is accompanied by both higher wage and labor productivity growth, capital intensity per se translates only into higher labor productivity growth – not wage growth. On average, firms in sectors with ICT intensity higher than the median experience an additional growth in labor productivity and wages by about 0.4 percent than the rest. Firms in sectors with capital intensity higher than the median experience a similar growth in labor productivity. In contrast, wage growth is similar across firms in sectors with high and low capital intensity.

Firms in tradeable sectors experience higher labor productivity growth than firms in non-tradeable sectors. However, such productivity growth is not accompanied by a similar growth on wages. In fact, wage growth is not statistically different between tradeable and non-tradeable sectors.

Firms in the capital city tend to exhibit lower rates of wage growth than firms outside the capital. Labor productivity growth is also lower among firms in the capital city, but the differences are smaller in magnitude and less precisely estimated.

Foreign firms experience higher labor productivity and wage growth than domestic firms that are privately owned. While their additional wage growth is around 0.8 percent, their additional productivity growth is almost twice that figure. Government owned firms also experience higher labor productivity and wage growth than domestic private firms. However, it is difficult to identify to what extent such disproportionate productivity growth is due to real productivity if these firms belong to sectors that are typically considered as natural monopolies.

Firms that have a board with a female majority experience substantially lower labor productivity growth than those with a male majority. Wage growth, in contrast, is similar across both groups of firms. The lower productivity growth of female-managed firms could reflect the existence of gender gaps in terms of access to finance and other productive assets. It could also reflect a different sectoral composition of female vs. male-run companies, since the regressions only control for aggregate sectors.

While there is a large literature on the positive impacts of female managers on firms' performance by improving diversity, the descriptive statistics presented here suggest that at least among the countries included in the sample, the barriers to entrepreneurship and access to assets faced by women may dominate.[8] However, the results presented here do not control for other demographic characteristics of managers, such as education or experience.

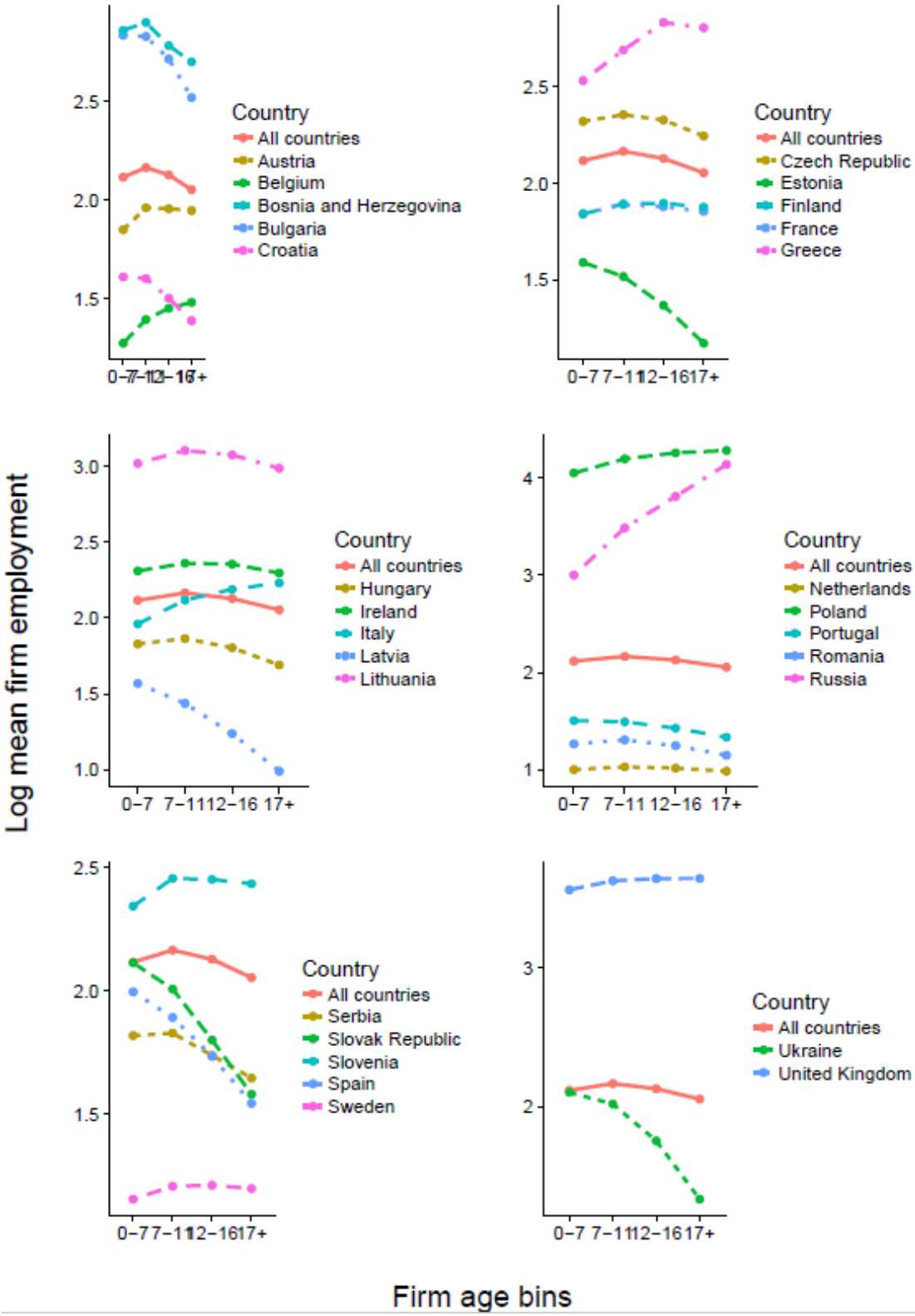
The Lifecycle of firms[9]

On average, firms in the sample tend to grow their number of employees during the first 11 years since entry (Figure 4**).** They then start to shrink. However, there is substantial heterogeneity across countries. For example, firms on average tend to downsize every year since entry (during the 2007-2013 period) in countries such as Estonia, Latvia, Slovak Republic and Ukraine. In contrast, firms tend to expand every year since their market entry (during the 2007-2013 period) in Belgium, Russia and Poland. Given the short period under analysis, these results should be interpreted with caution given that they are likely to be affected by country-specific developments during that period.

[8] See, for example, Cordeiro, James J., and Susan Stites-Doe. "The impact of women managers on firm performance: Evidence from large US firms." International review of Women and Leadership (1997); Smith, Nina, Valdemar Smith, and Mette Verner. "Do women in top management affect firm performance? A panel study of 2,500 Danish firms." International Journal of productivity and Performance management 55.7 (2006): 569-593; Dezsö, Cristian L., and David Gaddis Ross. "Does female representation in top management improve firm performance? A panel data investigation." Strategic Management Journal 33.9 (2012): 1072-1089; Nakagawa, Yukiko, and G. M. Schreiber. "Women as drivers of Japanese firms' success: the effect of women managers and gender diversity on firm performance." Journal of Diversity Management (Online) 9.1 (2014): 19.

[9] This subsection takes advantage of the panel structure of the data to investigate employment growth patterns over the lifecycle of firms. Since the period under analysis covers only 7 years, this analysis is built on the assumption that the relationship between employment growth and age is similar for firms that were established in different years.

Figure 4: The lifecycle of firms



Note: Coefficients estimated by OLS using log(employment) as the dependent variable, while controlling for firm fixed effects. Each dot is the coefficient associated with a dummy variable equal to one for the age bracket.

Growing, stagnant and shrinking firms

Mind the caveats when interpreting growth and survival of firms. Identifying which firms are able to survive and grow is key for tailoring policies that foster private sector job creation. Since the dataset does not allow the identification of firm entry or exit, the estimates of the share of growing firms are likely to be biased. JIELD still provides information on this topic to exemplify interesting findings. However, when interpreting these findings, it is important to keep in mind the caveat that the following indicators refer exclusively to firms that remain in the market every year during the 2007-2013 period.

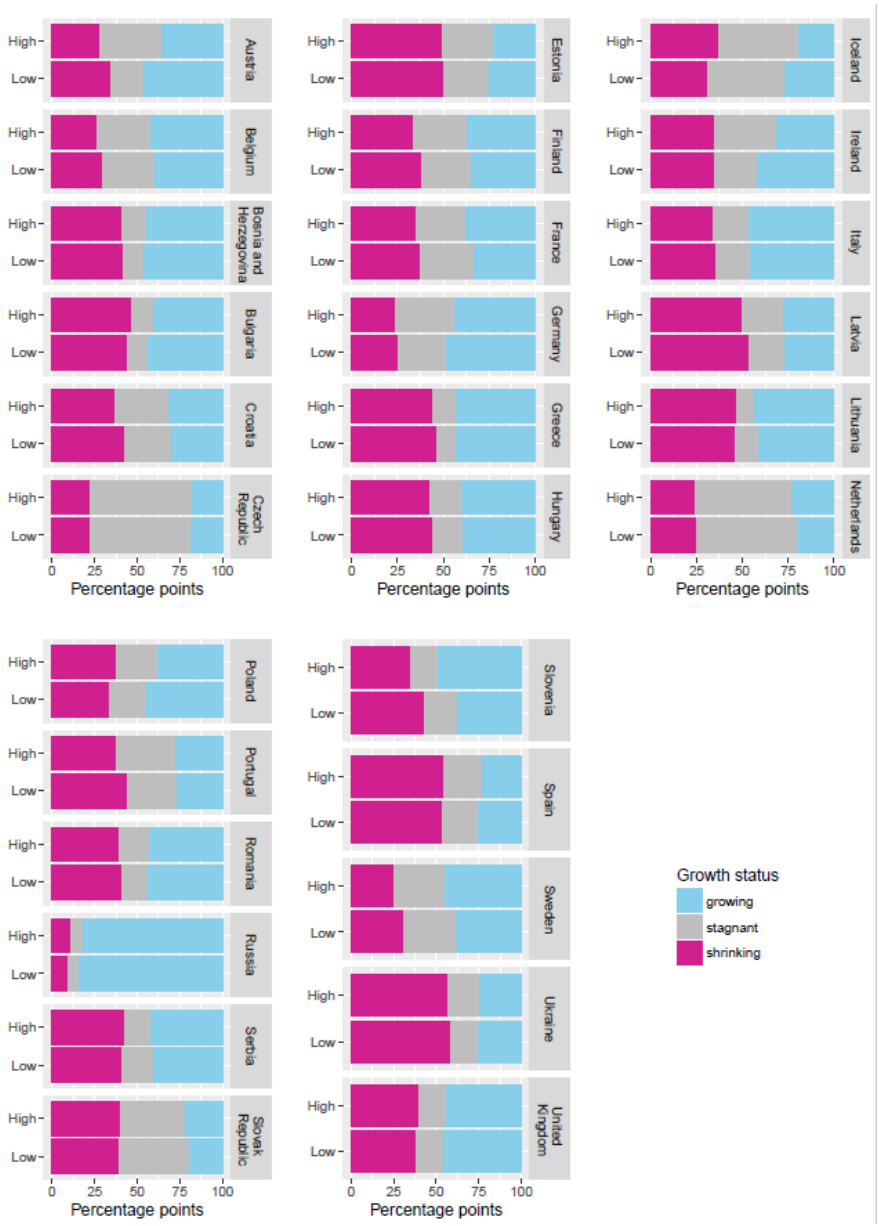
There is substantial variation in terms of the share of growing firms across countries (Figure 5**).** The share of growing firms is higher in Germany, the United Kingdom, Sweden, Italy and Russia. The share of shrinking firms is higher in Ukraine, Latvia, Lithuania, Spain and Bulgaria, among others. While these differences across countries may be a reflection of the different business environments, they could also reflect firms' capabilities. Especially for those firms that operate in a common competitive environment.

Figure 5: Growing, stagnant and shrinking firms

Note: stagnant firms are those with an employment growth rate between -6 to 6 percent from 2007 to 2013.

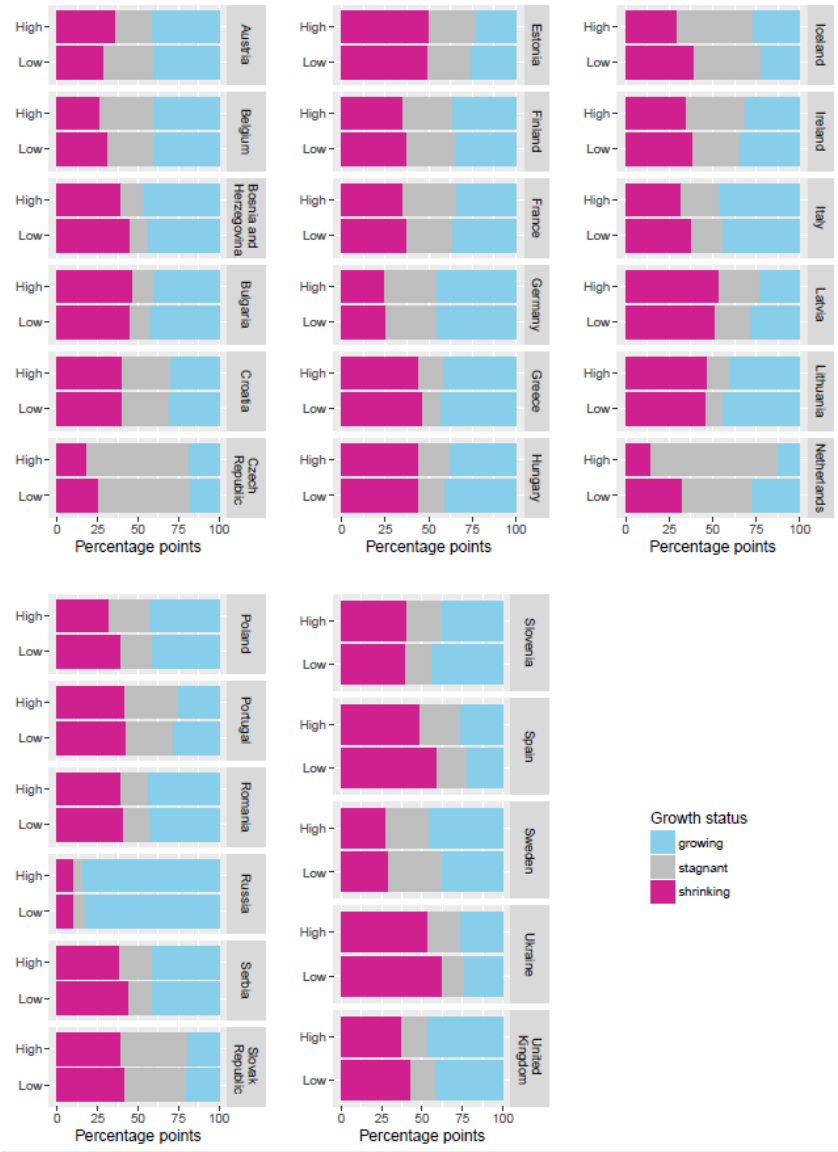
Capital intensity does not seem to affect firm growth in most countries. Based on economic theory, different degrees of capital intensity per sector should lead to differential employment effects. For example, firms in capital intensive sectors may create less jobs than firms in labor intensive sectors. The data does not show clear evidence supporting this claim. In fact, the share of growing firms is very similar across sectors with high and low capital intensity in most economies. Some exceptions include Austria and Iceland – where there is a lower share of growing firms in capital intensive sectors-, as well as Slovenia and Sweden – where there is a higher share of growing firms in capital intensive sectors.

Figure 6: Share of firms by employment growth status and capital intensity (high vs. low).



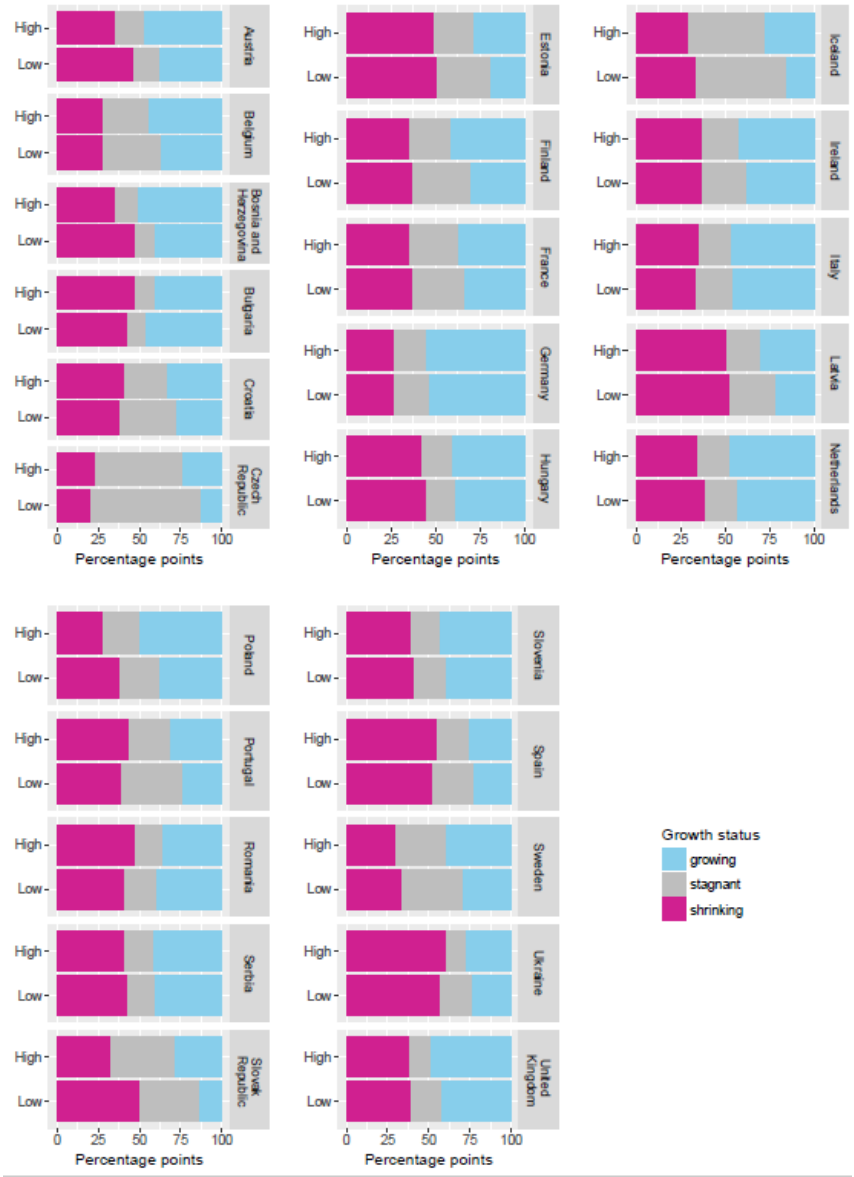
Sectors with low ICT intensity tend to feature more firms with shrinking employment. The process of creative destruction where dynamic and more productive sectors lead the process of job creation, while firms in traditional sector shrink, is an intrinsic component of the structural transformation of countries. The emergence of the ICT sector is a reflection of the increased adoption of digital technologies across the world. In most of the countries of the sample, the share of shrinking firms is in fact higher among sectors with low ICT intensity. This is particularly true in countries such as the Netherlands, Ukraine, Spain and Poland. It may indicate that at least in part, the destruction of jobs is disproportionately larger in more traditional sectors.

Figure 7: Share of firms by employment growth status and ICT intensity (high vs. low).



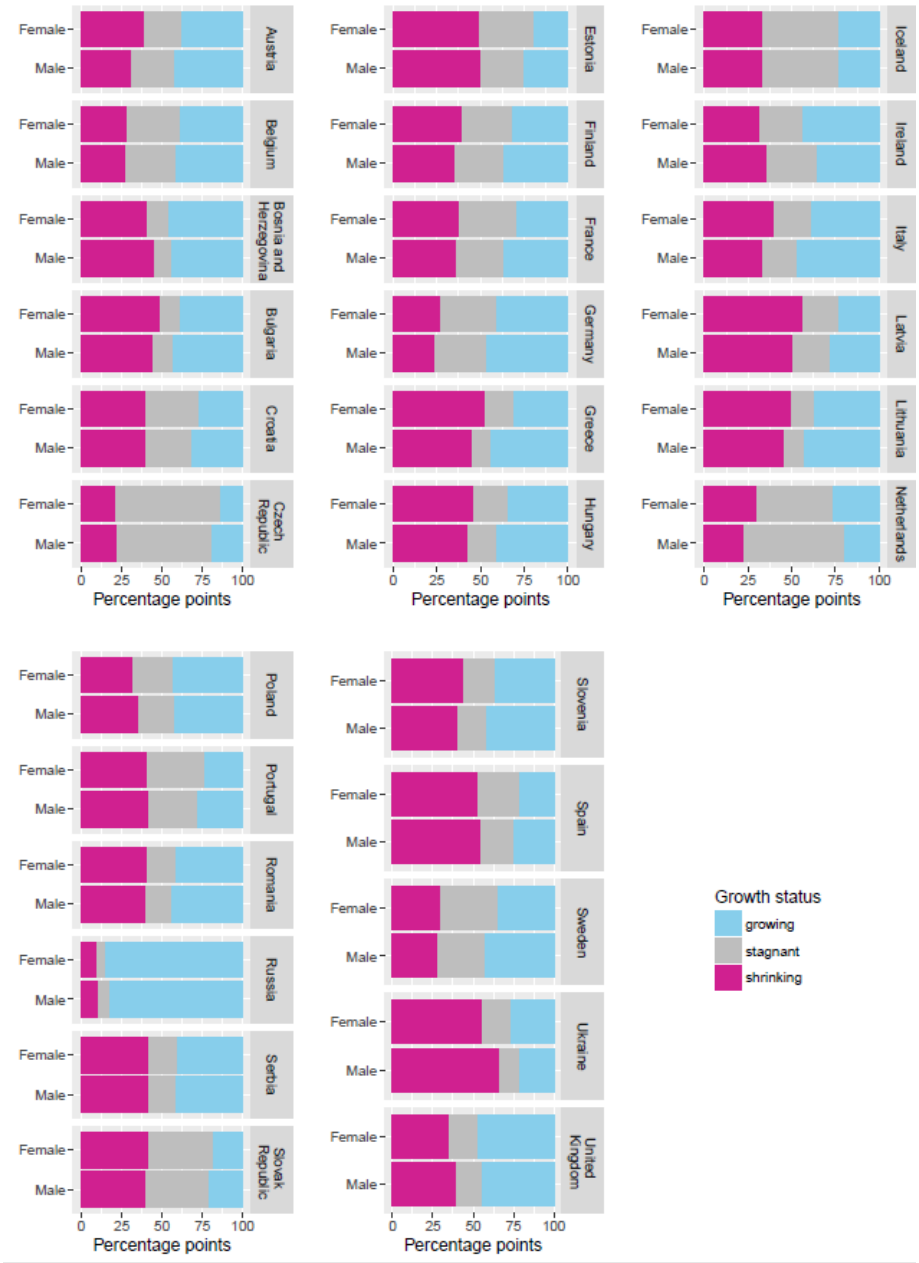
In most countries, growing firms pay higher wages. While job creation is crucial for poverty reduction and shared prosperity, its impacts would most likely not be substantial if these additional jobs were created in unproductive activities with low wages. In most of the countries in the sample, however, the share of growing firms is higher among firms that pay wages per employee above the median. This is particularly the case in countries such as Poland, Austria and Belgium. In contrast, the opposite is true among two of the poorest countries in the sample, Bulgaria and Romania, where high-wage firms are less likely to grow than their low-wage counterparts.

Figure 8: Share of firms by employment growth status and average wages. (high or low relative to the median per employee)



Evidence points at systematic disadvantages for firms that have a female majority in their board. Gender barriers to entrepreneurship and access to credit and other production factors can be a significant obstacle to job creation. In fact, in almost every country considered, female-managed firms are more likely to shrink and less likely to expand when compared to their male-managed counterparts. These gender gaps seem higher in countries such as Slovenia, Lithuania and Latvia. In contrast, women-managed firms are more likely to grow and less likely to shrink in Bosnia-Herzegovina, the Netherlands and Ukraine.

Figure 9: Share of firms by employment growth status and gender majority of the board



4. Which firms create more and better jobs?[10]

4.1. Methodology and related literature

In this section, we provide conditional estimates of which firms create more jobs. There is a large body of literature investigating the determinants of firm growth. The seminal work of Birch (1979) emphasized the role of SMEs in driving aggregate job creation. However, the methodology behind such evidence has significant limitations. These include biases related to regression to the mean and to the way that firm size is defined, lack of distinction between net and gross job creation and the fact that the econometric model did not include firm's age as a control variable (Davis et al. 1996; Haltiwanger et al. 2013). Studies that address these issues find that young firms contribute the most to job creation, and that the role of size significantly weakens when controlling for firms' age (see, for instance, Haltiwanger et al. 2013 for the United States; Rijkers et al. 2014 for Tunisia; Criscuolo et al. 2014 for Europe). Studies of firm growth using ORBIS data also find that young SMEs contribute disproportionately to job creation in European countries (Arias et al., 2014; Muller et al. 2015). To a large extent, the important role of age is driven by firm entry.

We estimate the following equation:

$$growth_{i,t} = \beta_s Size_{i,t} + \beta_a age_{i,t} + \beta_p productivity_{i,t} + \beta_w wage_{i,t} + \mu_{c,t} + \mu_s + \varepsilon_{i,t} \quad (1)$$

Where $growth = 2\frac{E_{i,t}-E_{i,t-1}}{E_{i,t}+E_{i,t-1}}$, is a symmetric measure of firm-level growth, bounded by -2 and 2. We estimate growth in three firm-level variables: total number of workers, labor productivity and average wages. Labor productivity is defined as sales per employee, while average wage is the wage bill per employee. Thereby, wage growth captures a mix of wage growth per employee, and changes in staff composition. All the regressions are employment-weighted (average employment between current and previous year), so that the dependent variable is equal to the appropriate employment-weighted mean, and coefficients can be interpreted as employment-weighted conditional means. $Size_{i,t}$ is a vector of size dummy variables. To avoid the bias associated with using the firm size at the beginning or at the end of the period, we follow Davis et al. (1996) and use the average of the firm size between the start and the end year of the growth period to define a firm's size. $age_{i,t}$ is a vector firm-level age dummy variables. Following Rijkers et al. (2014), we include control variables for firm-level productivity and wages. We use the log of the average productivity and wage per worker over the period over the growth of the dependent variable is defined. The parameters $\mu_{c,t}$ and μ_s represent country-time and sector fixed effects, to control for any unobserved factors varying across countries and over time such as economic growth, and for unobserved sector characteristics such as a declining manufacturing sector. The estimated coefficients should be interpreted as correlations and not as causal effects, since they are likely to be endogenous and there could be omitted variables that we are unable to control for.

We also carry out a robustness check to test whether the estimated coefficients are driven by the particular characteristics of the ORBIS dataset. As described in previous sections of this report, the

[10] In contrast to the regression results mentioned above which were intended to provide descriptive results, this section the OLS equation controls for highly disaggregated sector dummy variables (at the three-digit ISIC 4 level) and country-year fixed effects, to control for potential unobserved heterogeneity at the sector level and country-level shocks affecting all firms equally.

microdata from Orbis does not come from Census or surveys, thereby they are not necessarily representative of the universe of firms. Moreover, since we restrict the data to a balanced panel of firms during the period, it fails to account for labor market dynamics driven by firm entry or exit. We construct weights to replicate the sectoral and size structure of the universe of firms for each country and year. More specifically, we use data from the OECD's Structural and Demographic Business Statistics (SDBS), which provide the number of firms per country and year at the 2-digit ISIC sector level and for four different firm-size brackets (1-9 employees, 10-49 employees, 50-249 employees, and 250 employees or more). We then weight each firm in Orbis using the parameter $\frac{L^{SDBS}_{c,t,s,e}}{L^{ORBIS}_{c,t,s,e}}$, where $L^{SDBS}_{c,t,s,e}$ and $L^{ORBIS}_{c,t,s,e}$ are the number of firms in SDBS and Orbis, respectively, in the country c, year t, sector s and firms of size s. This post-stratification procedure assumes that within each country-year-sector-size cell, firms in the Orbis dataset are representative of the universe of firms in the same cell. Several papers have used a similar technique to improve the representativeness of the Orbis dataset.[11]

4.2. Which firms contribute to create most of the "good" jobs?

Young firms disproportionately contribute to job creation. Table 8 shows the estimates of equation (1). In general, the results point out the significant contribution of young firms to job creation. As seen in column (2), net job creation by firms born on 2005 is 7.8 percent higher than that of firms born before 1990. Young firms also disproportionately contribute to labor productivity and wage growth, by an additional 4 and 3 percent when compared to the oldest group. When controlling for the full set of fixed effects, we find that firms with 10 to 49 employees are the ones who contribute the most to job creation with respect to firms of other sizes, by an additional 2.3 percent with respect to firms with fewer than 10 employees. Firm size matters for productivity, as it seems that larger firms are the ones who contribute the most to labor productivity growth, even though they are not the ones who create the most jobs or contribute disproportionately to wage growth. Other variables such as being foreign-owned, female-managed or being from the capital city do not have a statistically significant association with net job creation.

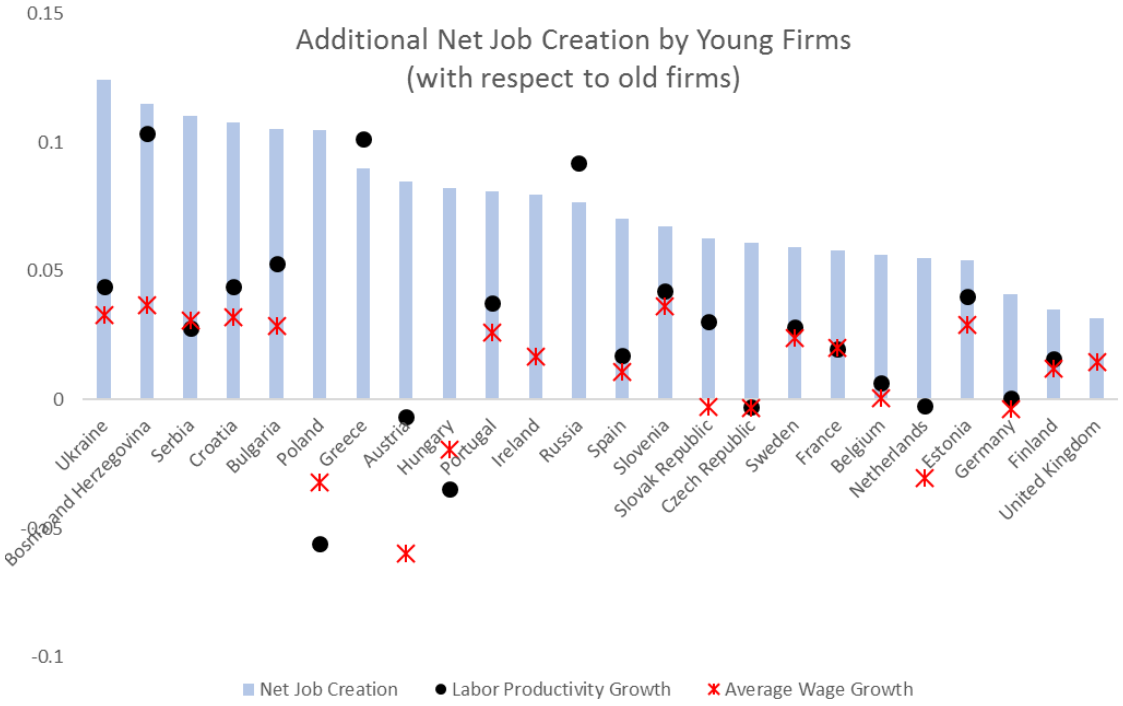
The key role of young firms still holds when adjusting the sample to improve its representativeness. Table 9 shows a robustness check using the weighting scheme that aims to replicate the size and sectoral structure of the actual population of firms in each country by year. The estimation sample is different from that of Table 8, because data on business demography is not available Bosnia-Herzegovina, Russia and Ukraine. Even though the coefficients are slightly different in magnitude, the main message still holds. Young firms are the ones who disproportionately contribute to net job creation, productivity and wage growth. In fact, the confidence intervals of the baseline coefficients and those of the re-weighted sample overlap. The patterns change slightly with respect to the effect of size. Firms with 10 to 49 employees no longer contribute more to job creation than those with 9 employees or less. In contrast, it is firms with 50 to 249 employees who contribute more to job creation when compared to other firm sizes. Accordingly, in the re-weighted sample the positive relationship between productivity growth and firm size attenuates. More specifically, while firms with 10 employees or more contribute more to labor productivity growth

[11] See, for example, Gal (2013), Dall'Olio (2013), McGowan et al. (2017), Arnold et al. (2008). These papers use a re-sampling technique, where firms in each cell are re-sampled with replacement until the share of each cell in the sample is equal to that of the population of firms. Our procedure achieves the same result by re-weighting all the firms in each cell, and it is more computationally efficient.

than their smaller peers, there are no large differences between firms of different sizes above that cut-off. Regarding wage growth, the results are robust to the weighting scheme, as firms in the 10 to 49 employee bracket are still disproportionately contributing to wage growth than their peers of different sizes.

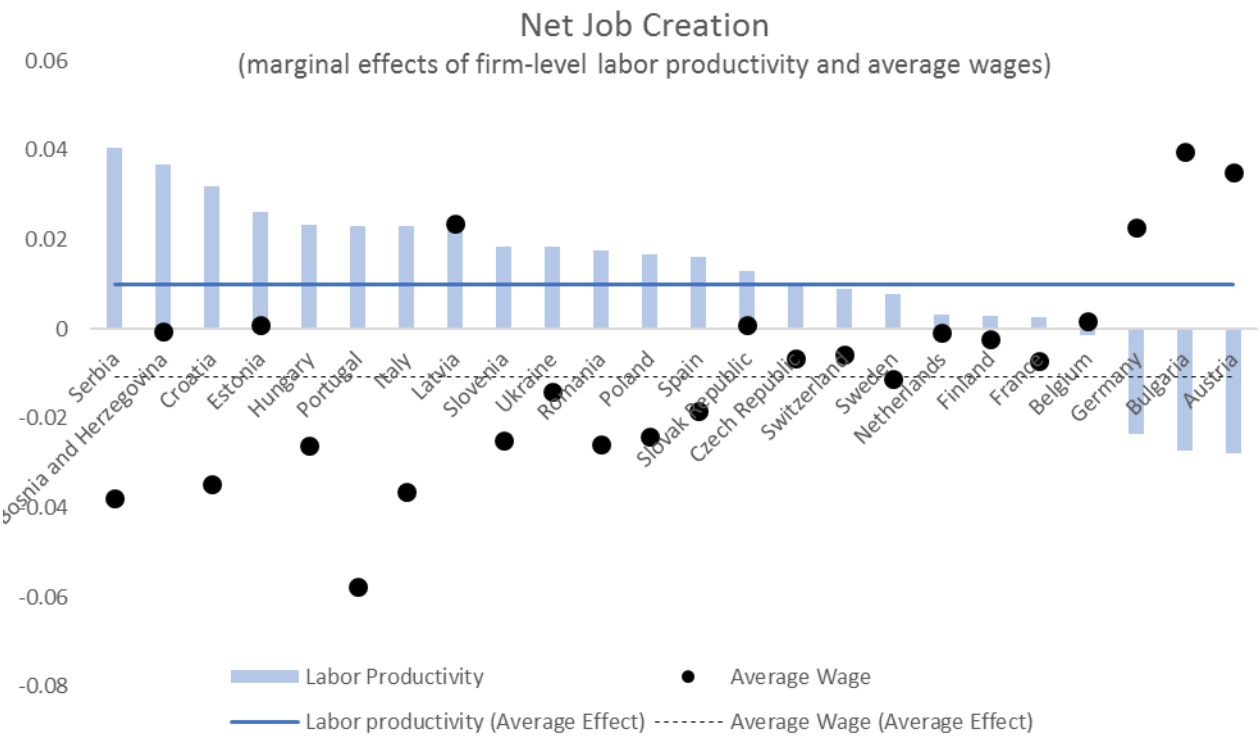
Across most countries, young firms make the largest contributions to employment, productivity and wage growth. The results at the country level also show the importance of young firms in the process of job creation. As seen in Table 11, which plots the coefficient associated with the youngest age group, the point estimates for net job creation are positive for all countries. Moreover, the contributions of young firms to labor productivity and wage growth are also larger than those of old firms in almost every country.

Figure 10. Additional job creation by firms' characteristics



However, it is not the most productive firms that contribute the most to job creation, a finding that raises concerns about the lack of creative destruction in the region. As seen in Table 10, firm-level labor productivity and average wage are not correlated with net job creation. That is, even though young firms contribute the most to both job creation, wage growth and labor productivity growth, it is not the most productive or higher-wage firms who create more jobs. This is regardless of whether we control for firm age or size. This suggests that the process of creative destruction, where productive firms expand and less productive firms contract, is very weak in this sample of firms. Nevertheless, these average results hide substantial heterogeneity across countries. As seen in Figure 11, firms with higher levels of labor productivity are more associated with net job creation in the Western Balkans and Central Europe than in the rest of the region. For example, in Bosnia-Herzegovina, firms with labor productivity 1 percent higher contribute 4 percent more to net job creation than the rest. In contrast, high-wage firms contribute less to job creation than low-wage ones in most countries.

Figure 11. Net job creation by productivity and wage levels



In summary, young firms not only disproportionately contribute to job creation, but also to the creation of "good" jobs. That is, they disproportionately contribute to labor productivity and wage growth than older firms. While medium-sized firms also contribute to job creation and productivity growth, the magnitude of their contribution is considerably smaller. The results are, in general, robust to using a weighting scheme that replicates the actual business demography of the countries in the sample, especially regarding the impacts of young firms. At the same time, even though young firms contribute to job creation, productivity and wage growth, it is not the most productive or high-wage firms the ones who in general contribute to the creation of "good" jobs. These results show mixed conclusions regarding the process of creative destruction in this sample of countries, as there is a group of young firms with positive net contributions to job, productivity and wage growth, but where they are not necessarily the ones providing the most productive and high-wage jobs.

4.3. What is the role of labor market policies in explaining patterns of job creation across countries?

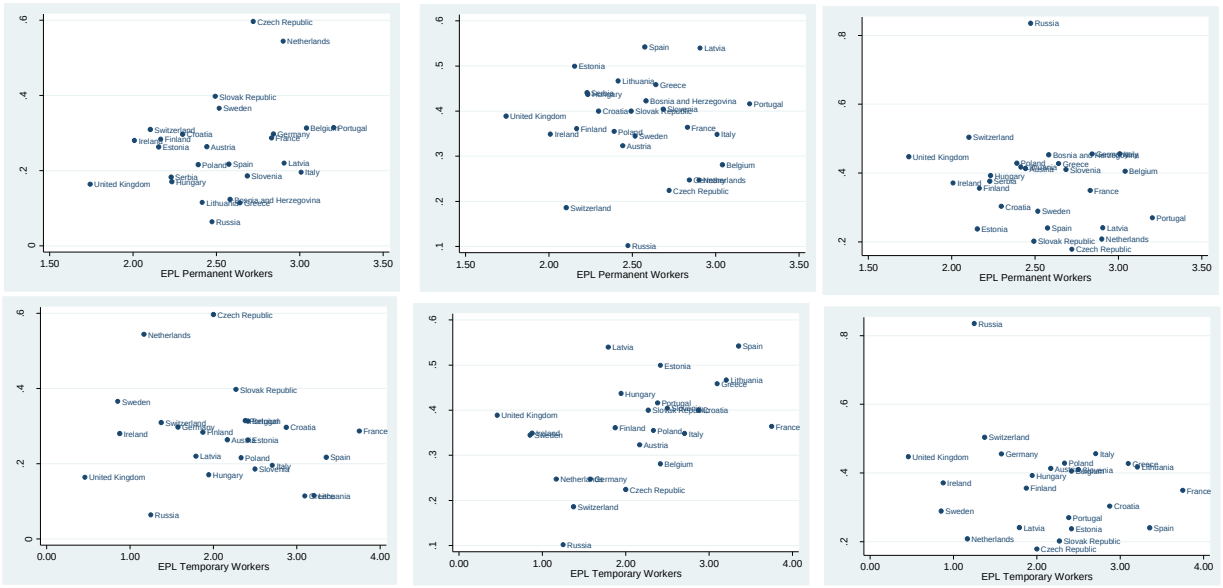
Several articles show that strict EPL has negative effects on job creation. There is a large body of literature on the impacts of EPL on firms. Several scholars examined the impacts of EPL by exploiting the variation induced by policy changes. Using establishment-level data, Baek and Park (2017) show that a labor market reform aimed to restricting the use of temporary contracts in South Korea decreased overall employment, particularly among firms that used temporary contracts more intensively. Kugler and Pica (2008) find that the increase in dismissal costs for firms below 15 employees in Italy in 1990 disproportionately decrease gross job flows and entry rates in this group of firms when compared to larger

firms. Bornhall et al. (2015) find that a specific firing restriction in Sweden reduced firm growth. Bauer et al. (2007) study the effect of changes in the threshold scale exempting small establishments from dismissal protection provisions on worker flows in Germany and find no effects. Kugler et al. (2003) find a relaxation of EPL in Spain in 1997 increased the employment of young and female workers. Autor et al. (2007) find that the adoption of EPL across US States reduced employment flows and firm entry rates. Some studies exploit between and within country variations in EPL or its enforcement. Bravo-Biosca et al. (2016) find that stringer EPL is associated with a less dynamic firm growth distribution, with more stagnant firms and fewer growing and shrinking firms. Almeida and Carneiro (2005) find that higher enforcement of EPL is associated with poorer firm performance in Brazil. Adhvaryu et al. (2013) find that stronger EPL attenuate firms' responses to weather shocks in India. There is also a group of studies evaluating the impact of EPL on gross job flows. Micco and Pages (2004, 2006) use sector-level data for 18 countries and classify sectors according to their flexibility requirements using the US as a benchmark. They confirm that gross job flows (i.e. job creation plus job destruction) are lower in countries with strong EPL, particularly in industries that require a higher level of reallocation. They also find that employment declines in the most affected sectors, driven by a decline in the net entry of firms. Using a similar methodology and a dataset more representative of the universe of firms than that of Micco and Pages (2004, 2006), Haltiwanger et al. (2014) confirm that strong EPL reduces job reallocation. Finally, some studies analyze the role of EPL using Orbis data. For instance, Messina and Vallanti (2007) find that when EPL is stronger, firms respond by smoothing the destruction of jobs over the business cycle. Gomez-Salvador et al. (2004) find that the strictness of EPL has a negative effect on job creation, even after controlling for several firm characteristics.

There is some evidence that strict Employment Protection Legislation (EPL) hampers firm growth in the region. Figure 12 shows the relationship between the strictness of EPL and the share of growing, shrinking and stagnant firms. The share of stagnant firms tends to be higher in countries with stronger EPL for permanent workers, while the share of shrinking firms is higher in countries with stronger EPL for temporary workers. We contribute to this literature by analyzing how EPL change the profile of firms creating jobs. To our knowledge, empirical evidence on this question for a comparable set of countries does not exist. We estimate equation (1) adding indicators on EPL for permanent and temporary workers as explanatory variables.[12] Since this variable is absorbed by the country-year fixed effects, we explore interactions between the EPL and firm characteristics. The values of the EPL indexes go from 0 (least restrictive) to 6 (most restrictive). Since not all countries and years are covered in the dataset, we use the average index over the period 2007-2013. To facilitate the interpretation of the coefficients, instead of introducing the actual values of the indexes, we use a dummy variable equal to one if the country is in the top 25 percent of the EPL index.

[12] http://www.oecd.org/els/emp/oecdindicatorsofemploymentprotection.htm

Figure 12: EPL and firm growth



Strict EPL for both permanent and temporary workers seem to hurt more medium-size firms' growth prospects disproportionately when compared to smaller and larger firms. Table 11 shows the main results. Medium-sized firms (10-49 employees) contribute less to net job creation (when compared to firms with less than 10 employees) in countries with stricter EPL for both temporary and permanent workers than in countries with more relaxed regulations. In contrast, firms with 50 employees or more contribute more to job creation (when compared to firms with less than 10 employees) in countries with stricter EPL.

Young firms contribute less to job creation in countries with strong EPL for permanent workers. As seen in Table 11, the contribution of young firms to net job creation is 3 percent lower in countries with strong EPL for permanent workers. This is consistent with young firms facing more barriers than incumbents, so that the burden of stringent labor regulations hurt them disproportionately.

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Appendix 1

Table 1. Summary Statistics (1)

		Age of manager			Sector			Capital city (Yes/No)		Debt-equity ratio	
		Younger than 39 yrs	Between 40 & 49 yrs	Older than 49 yrs	Agriculture	Industry	Services	Not capital city	Capital city	low	high
Austria	AUT	33.53	43.11	23.35	NA	32.93	67.07	77.25	22.75	45.68	54.32
Belgium	BEL	1.73	3.95	94.32	1.63	26.32	72.05	89.6	10.4	49.1	50.9
Bosnia and Herzegovina	NA	2.86	4.08	93.06	2.86	40.41	56.73	94.69	5.31	47.17	52.83
Bulgaria	BGR	29.8	38.81	31.39	2.25	27.28	70.46	63.31	36.69	44.14	55.86
Croatia	HRV	4.74	9.23	86.04	2.03	25.58	72.39	71.16	28.84	50.01	49.99
Czech Republic	CZE	2.99	2.32	94.69	4.55	32.77	62.67	73.97	26.03	46.8	53.2
Estonia	EST	36.9	40.33	22.77	4.22	26.79	68.99	55.84	44.16	49.66	50.34
Finland	FIN	22.5	47.48	30.03	2.92	29.41	67.67	84.23	15.77	51.02	48.98
France	FRA	27.04	39.31	33.64	1.38	30.33	68.29	90.13	9.87	49.93	50.07
Greece	GRC	11.81	21.33	66.86	1.71	29.52	68.76	84.57	15.43	50.69	49.31
Hungary	HUN	2.26	1.73	96.01	4.61	28.43	66.95	69.93	30.07	47.7	52.3
Ireland	IRL	17.74	47.58	34.68	0.81	12.5	86.69	62.9	37.1	51.09	48.91
Italy	ITA	18	40.45	41.55	1.45	42.43	56.12	93.39	6.61	49.85	50.15
Latvia	LVA	3.94	2.54	93.52	3.33	21.36	75.31	42.58	57.42	31.69	68.31
Lithuania	LTU	3.69	2.17	94.14	3.69	33.41	62.91	64.43	35.57	32.29	67.71
Netherlands	NLD	1.23	3.25	95.52	1.73	11.62	86.65	94.71	5.29	50.07	49.93
Poland	POL	8.25	6.19	85.57	5.15	45.36	49.48	81.44	18.56	58.32	41.68
Portugal	PRT	1.13	1.73	97.14	3.01	25.26	71.73	88.7	11.3	49.14	50.86
Romania	ROU	43.76	28.94	27.3	3.74	21.4	74.86	78.83	21.17	49.12	50.88
Russia	RUS	2.02	1.53	96.45	9.82	23.46	66.73	84.64	15.36	49.4	50.6
Serbia	SRB	38.1	36.15	25.75	4.03	30.23	65.73	66.19	33.81	45.44	54.56
Slovak Republic	SVK	1.89	2.07	96.05	4.67	25.43	69.9	86.34	13.66	47.52	52.48
Slovenia	SVN	1.37	3.75	94.88	3.07	35.15	61.77	72.7	27.3	50.02	49.98
Spain	ESP	1.08	1.88	97.04	2.85	32.5	64.65	91.62	8.38	49.85	50.15
Sweden	SWE	2.03	4.5	93.48	3.12	22.4	74.49	89.28	10.72	50.44	49.56
United Kingdom	GBR	12.16	54.65	33.19	1.03	22.05	76.92	74.86	25.14	49.49	50.51

Note: each number is the percentage of firms in each sub-category.

Table 2. Summary Statistics (2)

		Female majority on board (Yes/No)		Firm age (bef 1990; 1990-2000; after 2000)			Global ultimate ownership (3 categories)			Klems sectorial capital intensity (median; high/low)	
		No female majority	Female majority	<1990	1990-2000	>2000	Local private	Local government	Foreign	low	high
Austria	AUT	90.42	9.58	26.95	36.53	36.53	95.81	0.6	3.59	45.26	54.74
Belgium	BEL	75.43	24.57	34.99	40.42	24.59	98.4	0.05	1.56	47.65	52.35
Bosnia and Herzegovina	NA	23.27	76.73	15.1	62.45	22.45	87.35	3.27	9.39	58.86	41.14
Bulgaria	BGR	81.32	18.68	8.08	47.28	44.64	91.13	1.32	7.55	50	50
Croatia	HRV	74.78	25.22	3.26	66.36	30.38	95.02	0.31	4.67	42.3	57.7
Czech Republic	CZE	86.83	13.17	1.12	67.07	31.82	91.58	0.04	8.38	45.26	54.74
Estonia	EST	79.59	20.41	0.79	57.02	42.2	93.72	0.1	6.18	48	52
Finland	FIN	87.42	12.58	32.86	39.42	27.72	95.75	0.89	3.37	51.08	48.92
France	FRA	79.89	20.11	28.91	36.7	34.39	94.59	0.58	4.83	51.25	48.75
Greece	GRC	90.1	9.9	46.29	37.52	16.19	93.33	0.38	6.29	52.99	47.01
Hungary	HUN	76.46	23.54	0.58	65.95	33.48	98.17	0.14	1.68	48.82	51.18
Ireland	IRL	79.44	20.56	20.16	36.29	43.55	85.08	0.4	14.52	48.39	51.61
Italy	ITA	83	17	40.28	33.99	25.73	95.65	0.68	3.67	49.35	50.65
Latvia	LVA	76.95	23.05	NA	46.1	53.9	91.17	0.19	8.64	50.39	49.61
Lithuania	LTU	77.87	22.13	NA	65.73	34.27	90.89	0.22	8.89	52.3	47.7
Netherlands	NLD	77.42	22.58	29.62	37.52	32.85	96.89	0.05	3.07	53.4	46.6
Poland	POL	93.81	6.19	20.62	59.79	19.59	75.26	9.28	15.46	58.54	41.46
Portugal	PRT	82.24	17.76	26.27	36.45	37.27	98	0.26	1.74	55.63	44.37
Romania	ROU	64.66	35.34	NA	41.83	58.17	93.9	0.15	5.95	48.73	51.27
Russia	RUS	70.14	29.86	1.38	49.03	49.59	92.19	4.58	3.23	56.15	43.85
Serbia	SRB	75.55	24.45	3.58	47.14	49.28	93.82	0.13	6.05	58.02	41.98
Slovak Republic	SVK	83.83	16.17	1.44	50.4	48.16	90.21	0.18	9.61	43.86	56.14
Slovenia	SVN	86.35	13.65	14.68	67.92	17.41	90.1	1.37	8.53	55.05	44.95
Spain	ESP	83.2	16.8	23.43	47.44	29.13	97.47	0.21	2.33	42.85	57.15
Sweden	SWE	87.14	12.86	31.33	37.36	31.32	97.82	0.18	2	51.21	48.79
United Kingdom	GBR	89.41	10.59	43.03	35.24	21.73	73.19	0.27	26.54	50.27	49.73

Note: each number is the percentage of firms in each sub-category.

Table 3. Summary Statistics (3)

		Klems sectorial ict intensity (median; high/low)		Market concentration in industry (2dig ISIC; median; high/low)		Mean firm size by employed (<10; 10-49; 50-249; >249 employees)				Tradables (JOBS classification)	
		low	high	low	high	<10	18172	50-249	>249	non tradable	tradable
Austria	AUT	46.97	53.03	16.52	83.48	61.68	33.53	2.99	1.8	63.47	36.53
Belgium	BEL	42.86	57.14	3.64	96.36	78.67	19.14	1.95	0.25	52	48
Bosnia and Herzegovina	NA	48.93	51.07	57.52	42.48	40.82	37.55	19.18	2.45	26.94	73.06
Bulgaria	BGR	71.31	28.69	51.04	48.96	42.52	36.03	17.35	4.11	33.91	66.09
Croatia	HRV	47.32	52.68	48.94	51.06	77.68	17.34	4.43	0.55	42.99	57.01
Czech Republic	CZE	44.2	55.8	51.07	48.93	54.53	32.22	11.02	2.24	43.11	56.89
Estonia	EST	50	50	47.12	52.88	80.08	14.92	4.51	0.49	56.04	43.96
Finland	FIN	39.13	60.87	46.23	53.77	65.46	26.57	6.73	1.24	54.38	45.62
France	FRA	44.8	55.2	48.24	51.76	68.88	22.31	6.91	1.91	47.5	52.5
Greece	GRC	68.34	31.66	47.12	52.88	31.62	50.29	13.14	4.95	26.1	73.9
Hungary	HUN	48.63	51.37	46.09	53.91	70.22	24.26	4.18	1.34	41.31	58.69
Ireland	IRL	26.27	73.73	41.78	58.22	57.26	28.23	11.69	2.82	70.97	29.03
Italy	ITA	48.97	51.03	49.57	50.43	55.88	33.18	9.18	1.76	39.23	60.77
Latvia	LVA	62.67	37.33	46.23	53.77	80.09	15.63	3.71	0.56	51.74	48.26
Lithuania	LTU	49.4	50.6	46.67	53.33	26.68	48.59	21.91	2.82	38.18	61.82
Netherlands	NLD	43.61	56.39	0.94	99.06	82.64	15.07	2.06	0.23	74.41	25.59
Poland	POL	51.65	48.35	49.34	50.66	7.22	28.87	47.42	16.49	35.05	64.95
Portugal	PRT	41.44	58.56	49.39	50.61	80.93	15.71	2.91	0.45	43.04	56.96
Romania	ROU	71.16	28.84	48.97	51.03	86.55	10.96	2.02	0.47	42.63	57.37
Russia	RUS	69.97	30.03	48.31	51.69	2.53	71.29	19.27	6.91	35.42	64.58
Serbia	SRB	47.26	52.74	44.91	55.09	72.82	23.21	3.12	0.85	29.65	70.35
Slovak Republic	SVK	43.99	56.01	49.99	50.01	60.11	29.74	7.82	2.34	43.4	56.6
Slovenia	SVN	50.2	49.8	52.5	47.5	54.27	29.35	13.99	2.39	31.4	68.6
Spain	ESP	48.36	51.64	48.76	51.24	71.42	24.05	3.77	0.76	44.57	55.43
Sweden	SWE	35.09	64.91	50.34	49.66	86.07	11.68	1.97	0.29	61.71	38.29
United Kingdom	GBR	34.19	65.81	41.59	58.41	23.41	28.22	35.73	12.65	60.81	39.19

Note: each number is the percentage of firms in each sub-category.

Table 4: basic_lnumberofemployees.xls

	(1)
VARIABLES	lnumberofemployees
government	1.420***
	(0.00473)
foreign	1.039***
	(0.00250)
firmage_d2	-0.431***
	(0.00118)
firmage_d3	-0.755***
	(0.00122)
sectorgroup_d2	0.296***
	(0.00204)
sectorgroup_d3	-0.0725***
	(0.00225)
femalerun	-0.239***
	(0.000932)
capitalcity	-0.0387***
	(0.00117)
sector_trad	0.169***
	(0.00128)
herfindahl_revenue_cat	0.0437***
	(0.000868)
liabtoassets_cat	0.133***
	(0.000764)
intensity_capital_cat	-0.0690***
	(0.00129)
intensity_ict_cat	-0.0728***
	(0.00118)
Constant	2.147***
	(0.00405)
Observations	9,877,605
R-squared	0.327
Robust standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Table 5: basic_growthofnumberofemployees.xls

	(1)
VARIABLES	growthofnumberofemployees
government	0.00149*
	(0.000785)
foreign	0.00400***
	(0.000696)
empgroup_d2	0.0224***
	(0.000325)
empgroup_d3	0.0128***
	(0.000442)
empgroup_d4	0.00108*
	(0.000610)
firmage_d2	0.00834***
	(0.000550)
firmage_d3	0.0456***
	(0.000694)
sectorgroup_d2	-0.00927***
	(0.000736)
sectorgroup_d3	0.00396***
	(0.000908)
femalerun	-0.00711***
	(0.000542)
capitalcity	0.00115*
	(0.000632)
sector_trad	0.000507
	(0.000694)
herfindahl_revenue_cat	0.00611***
	(0.000446)
liabtoassets_cat	0.00598***
	(0.000394)
intensity_capital_cat	-0.00436***
	(0.000699)
intensity_ict_cat	0.00541***
	(0.000612)
Constant	-0.00950***
	(0.00190)
Observations	8,528,483
R-squared	0.022
Robust standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Table 6: basic_growthoflabprod.xls

	(1)
VARIABLES	growthoflabprod
government	0.0246***
	(0.00210)
foreign	0.0152***
	(0.00119)
empgroup_d2	0.00637***
	(0.000505)
empgroup_d3	0.0321***
	(0.000693)
empgroup_d4	0.0497***
	(0.00117)
firmage_d2	-0.00597***
	(0.00100)
firmage_d3	0.00830***
	(0.00122)
sectorgroup_d2	-0.0350***
	(0.00164)
sectorgroup_d3	-0.0356***
	(0.00195)
femalerun	-0.0192***
	(0.00117)
capitalcity	-0.00230*
	(0.00121)
sector_trad	0.00973***
	(0.00131)
herfindahl_revenue_cat	-0.00109
	(0.000827)
liabtoassets_cat	0.00590***
	(0.000773)
intensity_capital_cat	0.00404***
	(0.00133)
intensity_ict_cat	0.00387***
	(0.00115)
Constant	-0.170***
	(0.00365)
Observations	7,166,389
R-squared	0.033
Robust standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Table 7: basic_growthofwage_pe.xls

	(1)
VARIABLES	growthofwage_pe
government	0.00360*
	(0.00194)
foreign	0.00788***
	(0.000998)
empgroup_d2	0.00610***
	(0.000352)
empgroup_d3	0.0104***
	(0.000547)
empgroup_d4	0.0199***
	(0.00100)
firmage_d2	-0.000193
	(0.000800)
firmage_d3	0.00823***
	(0.000952)
sectorgroup_d2	-0.0395***
	(0.00164)
sectorgroup_d3	-0.0390***
	(0.00194)
femalerun	-0.000830
	(0.000924)
capitalcity	-0.00326***
	(0.000999)
sector_trad	0.00160
	(0.00117)
herfindahl_revenue_cat	-0.00241***
	(0.000688)
liabtoassets_cat	0.00328***
	(0.000612)
intensity_capital_cat	-0.000382
	(0.00119)
intensity_ict_cat	0.00385***
	(0.00112)
Constant	-0.0902***
	(0.00313)
Observations	6,320,608
R-squared	0.042
Robust standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Table 8. ***Which firms create more and better jobs?***

	(1)	(2)	(3)	(4)	(5)	(6)
	Net job creation		Labor productivity growth		Average wage growth	
Foreign-owned	-0.00336	0.00183	0.00454	0.00714	0.00266	0.00356
	(0.00333)	(0.00363)	(0.00522)	(0.00566)	(0.00461)	(0.00462)
Employment Size						
10-49 employees	0.0334***	0.0230***	0.0127***	0.0160***	0.00171*	0.00707***
	(0.000425)	(0.00196)	(0.00102)	(0.00225)	(0.000968)	(0.00209)
50-249 employees	0.0224***	0.00983***	0.0242***	0.0251***	-0.00127	0.00716
	(0.00103)	(0.00337)	(0.00192)	(0.00441)	(0.00197)	(0.00470)
250+ employees	0.0217***	0.00270	0.0341***	0.0349***	-0.00486	0.00938
	(0.00441)	(0.00705)	(0.00770)	(0.0107)	(0.00684)	(0.00968)
Age						
Born between 1990-1999	0.0148***	0.0152***	-0.00643	0.000560	-0.00355	0.00285
	(0.00419)	(0.00419)	(0.00633)	(0.00624)	(0.00531)	(0.00528)
Born on 2000	0.0782***	0.0746***	0.0374***	0.0387***	0.0273***	0.0281***
	(0.00595)	(0.00563)	(0.00981)	(0.00902)	(0.00907)	(0.00833)
Female-owned	-0.0119	-0.00979	-0.0149	-0.00566	-0.0152	0.00178
	(0.00784)	(0.00794)	(0.0133)	(0.0143)	(0.0135)	(0.0137)
Capital City	-0.00174	-6.27e-05	-0.00672	0.00222	-0.00236	0.00191
	(0.00345)	(0.00404)	(0.00544)	(0.00620)	(0.00534)	(0.00548)
Constant	-0.0282***	0.0331	-0.0607***	-0.0875**	-0.0212***	-0.316
	(0.00354)	(58.64)	(0.00549)	(0.0445)	(0.00491)	(266.5)
Sector Fixed Effects	NO	YES	NO	YES	NO	YES
Country x Year Fixed effects	NO	YES	NO	YES	NO	YES

*Table 9. **Which firms create more and better jobs? Robustness check***

	(1)	(2)	(3)	(4)	(5)	(6)
	Net job creation		Labor productivity growth		Average wage growth	
	Baseline	w/ weights	Baseline	w/ weights	Baseline	w/ weights
Employment Size						
10-49 employees	0.0128***	0.00531	0.0181***	0.0228**	0.0100***	0.0241***
	(0.00228)	(0.00620)	(0.00265)	(0.00966)	(0.00231)	(0.00882)
50-249 employees	0.0164***	0.0152***	0.0314***	0.0190***	0.0133**	0.00771*
	(0.00454)	(0.00332)	(0.00511)	(0.00588)	(0.00524)	(0.00459)
250+ employees	0.0124	0.0132	0.0419***	0.0282*	0.0155	0.0113
	(0.00943)	(0.0107)	(0.0123)	(0.0158)	(0.0105)	(0.0128)
Age						
Born between 1990-2004	0.0121**	0.0140***	0.00462	0.00450	0.00360	0.00204
	(0.00550)	(0.00348)	(0.00755)	(0.00461)	(0.00602)	(0.00359)
Born on 2005 or after	0.0607***	0.0572***	0.0389***	0.0345***	0.0280***	0.0325***
	(0.00865)	(0.00849)	(0.0108)	(0.0132)	(0.00943)	(0.0121)
Constant	-0.0135	-0.0241	-0.160	-0.0185	0.399	-0.163***
	(0.0235)	(0.0177)	(337.1)	(0.0260)		(0.0320)
Sector Fixed Effects	YES	YES	YES	YES	YES	YES
Country x Year Fixed effects	YES	YES	YES	YES	YES	YES

Table 10. Job creation by levels of wages and productivity.

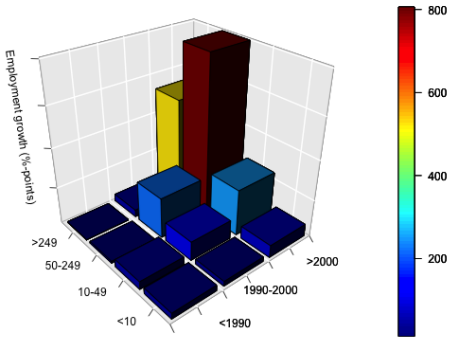
Dependent variable: Net Job Creation						
	(1)	(2)	(3)	(4)	(5)	(6)
Employment Size						
10-49 employees				0.0120***	0.0123***	0.0118***
				(0.00218)	(0.00228)	(0.00250)
50-249 employees				0.0169***	0.0170***	0.0170***
				(0.00516)	(0.00466)	(0.00540)
250+ employees				0.0153	0.0158	0.0164
				(0.0115)	(0.0120)	(0.0144)
Age						
Born between 1990-2004				0.0126**	0.0132**	0.0102
				(0.00508)	(0.00589)	(0.00644)
Born on 2005 or after				0.0605***	0.0642***	0.0616***
				(0.00827)	(0.00883)	(0.00993)
Wage per employee	-5.93e-05		-0.0112	0.000224		-0.0107
	(0.00103)		(0.00702)	(0.00133)		(0.00768)
Labor Productivity		0.000764	0.0101		0.000994	0.00982
		(0.000608)	(0.00628)		(0.000879)	(0.00650)
Constant	-0.0186	-0.00996	-0.0640	-0.0763**	-0.534	0.134
		(94.40)	(0.0393)	(0.0366)		
Sector Fixed Effects	YES	YES	YES	YES	YES	YES
Country x Year Fixed effects	YES	YES	YES	YES	YES	YES

*Table 11**. Job creation and EPL***

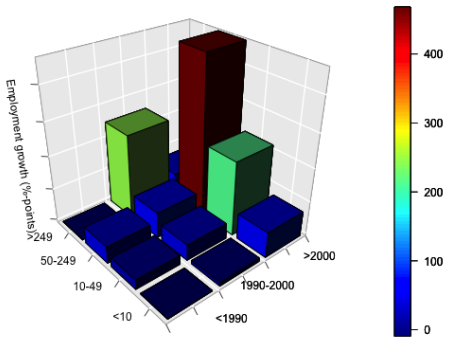
Dependent variable: Net Job Creation

		Interaction with policies	
	Baseline	EPL Permanent	EPL Temporary
Employment Size			
10-49 employees	0.0234***	0.0292***	0.0247***
	(0.00157)	(0.00110)	(0.00154)
50-249 employees	0.00634**	-0.000166	-0.00528**
	(0.00299)	(0.00163)	(0.00241)
250+ employees	-0.00375	-0.0118***	-0.0170***
	(0.00645)	(0.00270)	(0.00385)
Age			
Born between 1990-2004	0.0145***	0.0186***	0.0141***
	(0.00481)	(0.00350)	(0.00487)
Born on 2005 or after	0.0664***	0.0762***	0.0679***
	(0.00456)	(0.00353)	(0.00429)
Interactions with policy variables			
Employment Size			
10-49 employees x Policy		-0.0194***	-0.0127***
		(0.00248)	(0.00268)
50-249 employees x Policy		0.0125**	0.0264***
		(0.00503)	(0.00498)
250+ employees x Policy		0.0186	0.0322*
		(0.0134)	(0.0170)
Age			
Born between 1990-2004 x Policy		-0.00812	0.00254
		(0.00896)	(0.0110)
Born on 2005 or after x Policy		-0.0333***	-0.0176
		(0.00892)	(0.0123)
Sector Fixed Effects	YES	YES	YES
Country x Year Fixed effects	YES	YES	YES

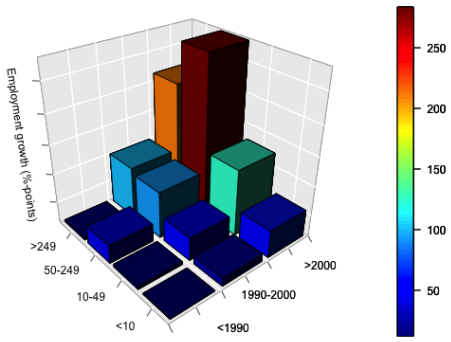
Austria



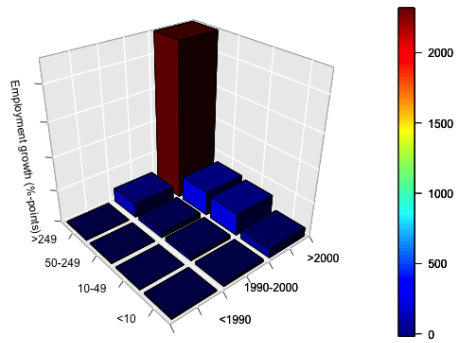
Bosnia and Herzegovina



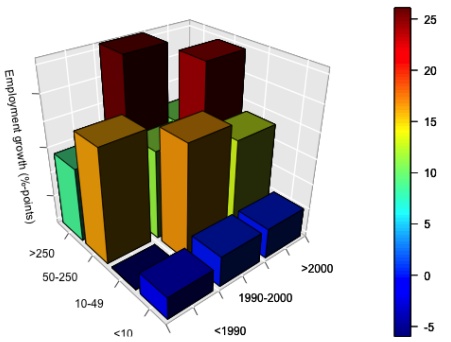
Belgium



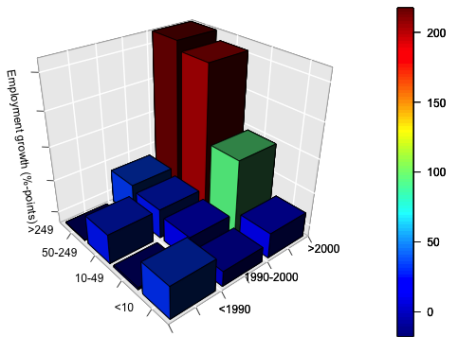
Bulgaria



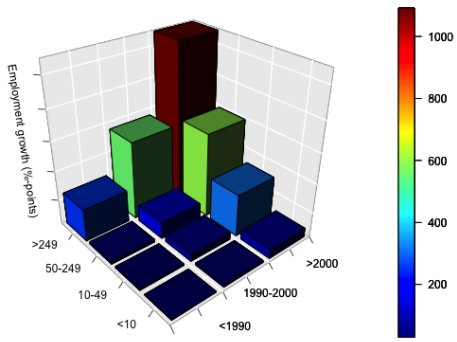
Switzerland



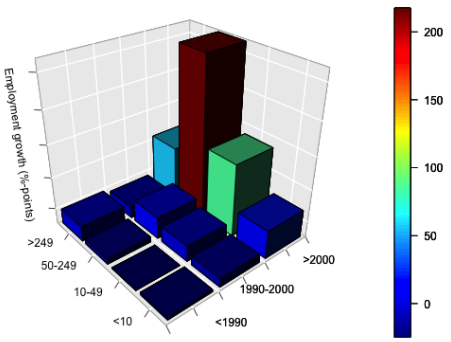
Czech Republic



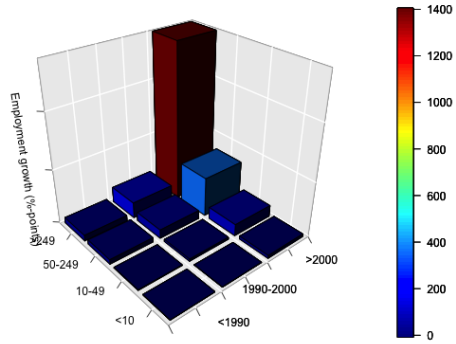
Germany



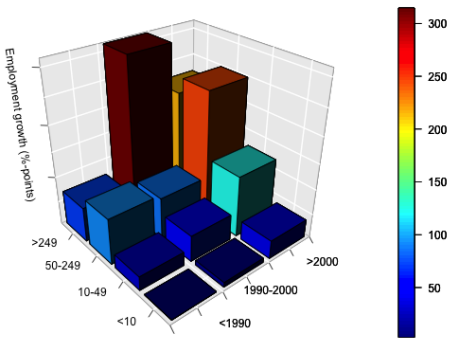
Estonia



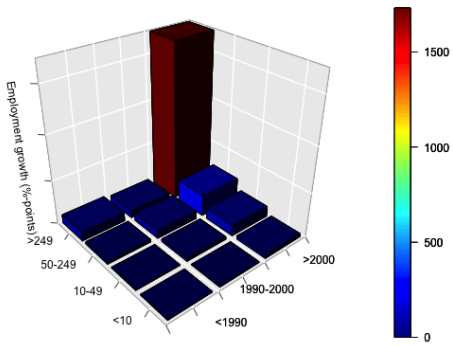
Spain



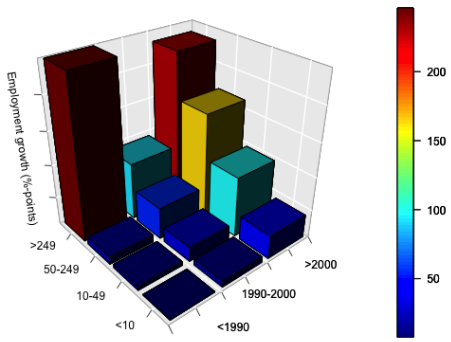
Finland

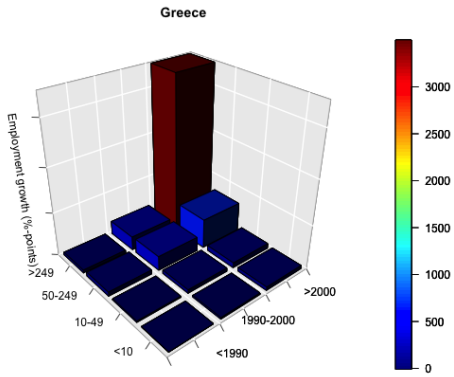


France



United Kingdom




Greece
Employment growth (%-points)
>249
50-249
10-49
<10
<1990
1990-2000
>2000
0
500
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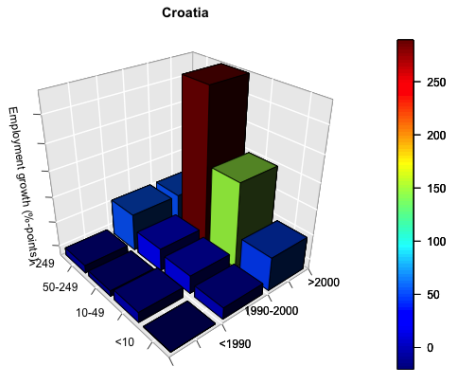
Croatia
Employment growth (%-points)
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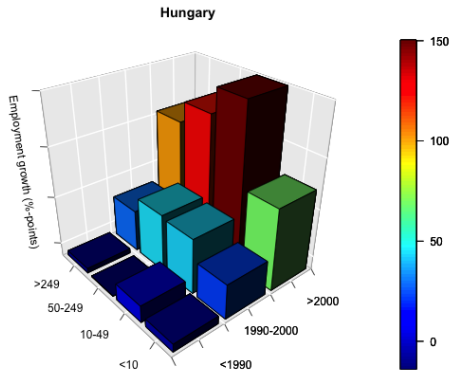
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Employment growth (%-points)
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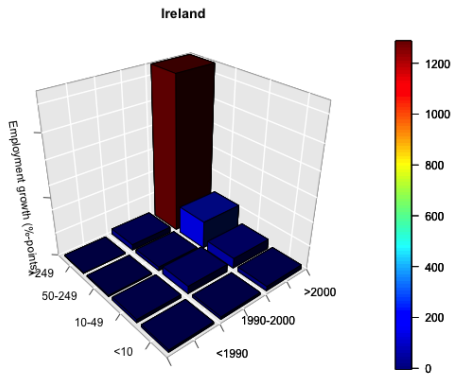
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Employment growth (%-points)
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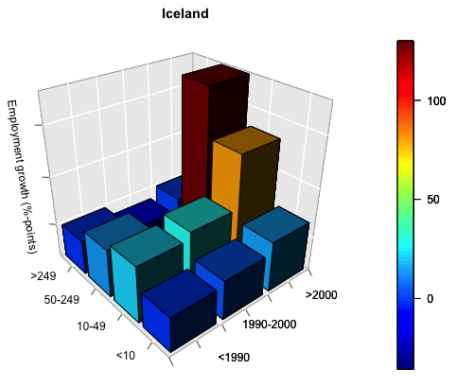
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Employment growth (%-points)
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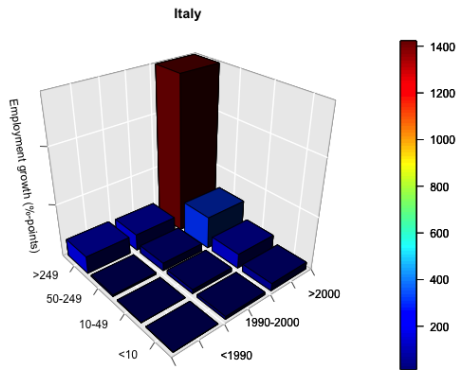
Italy
Employment growth (%-points)
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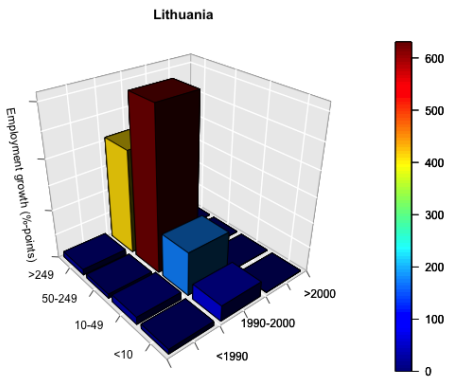
Lithuania
Employment growth (%-points)
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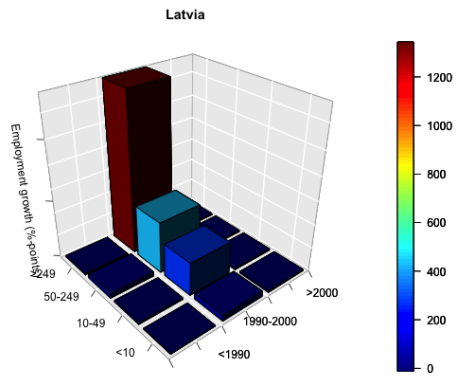
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Employment growth (%-points)
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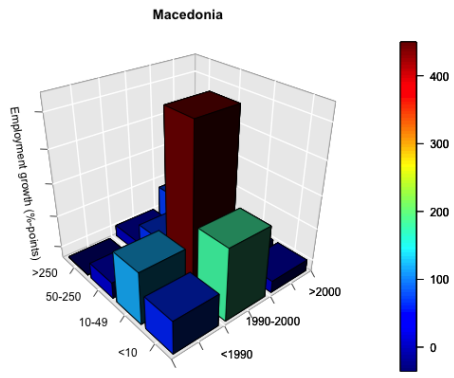
Macedonia
Employment growth (%-points)
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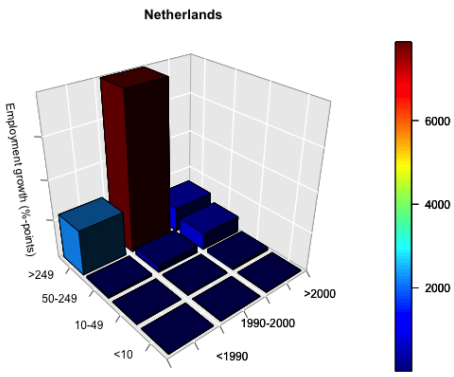
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Employment growth (%-points)
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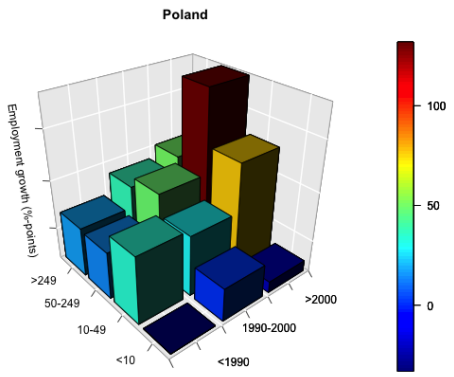
Poland
Employment growth (%-points)
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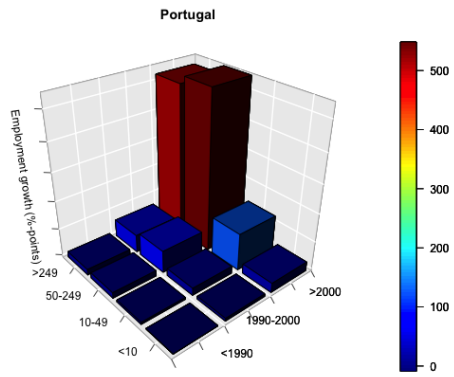
Portugal
Employment growth (%-points)
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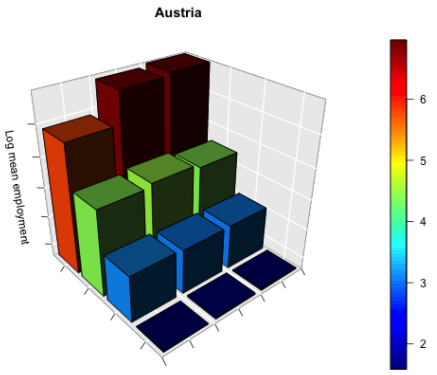
Austria
Log mean employment
6
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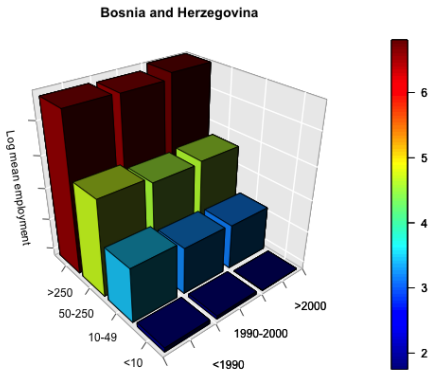
Bosnia and Herzegovina
Log mean employment
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1990-2000
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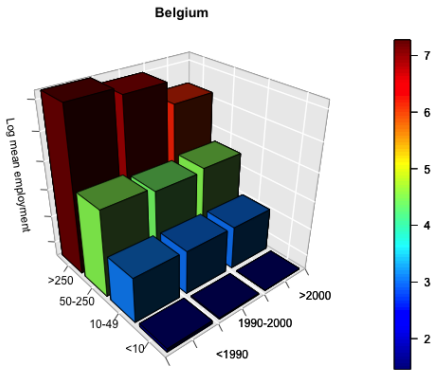
Belgium
Log mean employment
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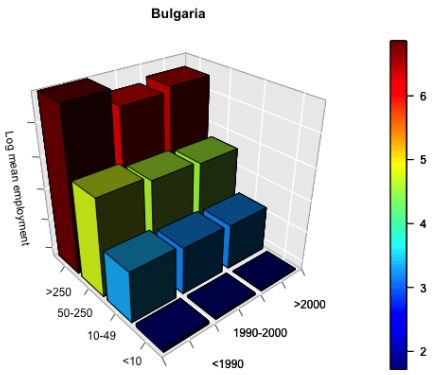
Bulgaria
Log mean employment
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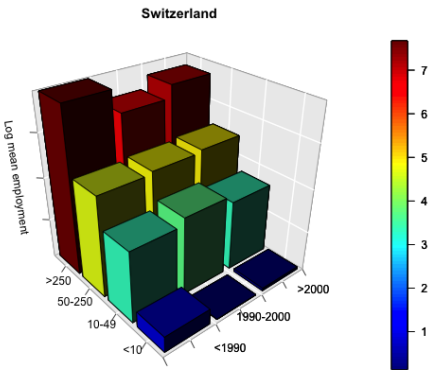
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Log mean employment
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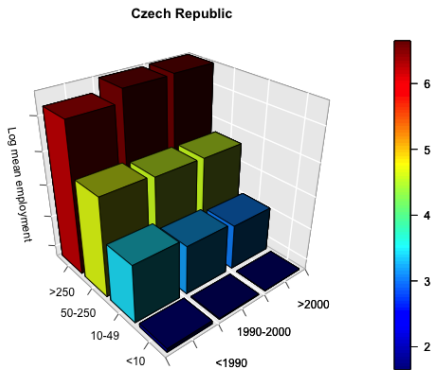
Czech Republic
Log mean employment
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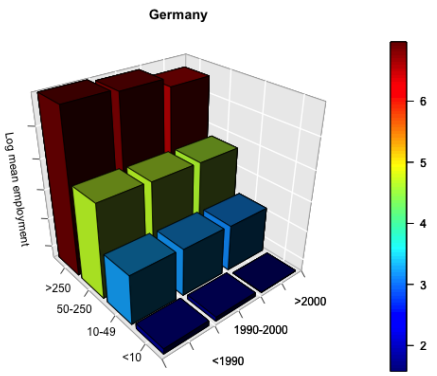
Germany
Log mean employment
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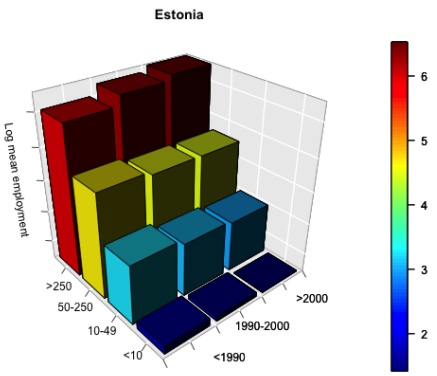
Estonia
Log mean employment
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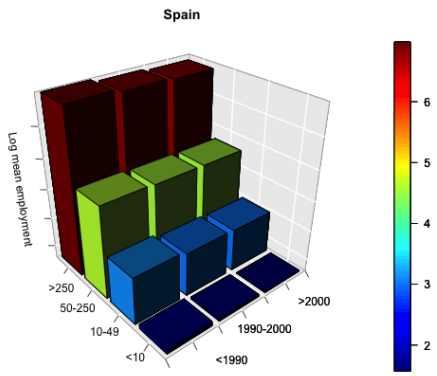
Spain
Log mean employment
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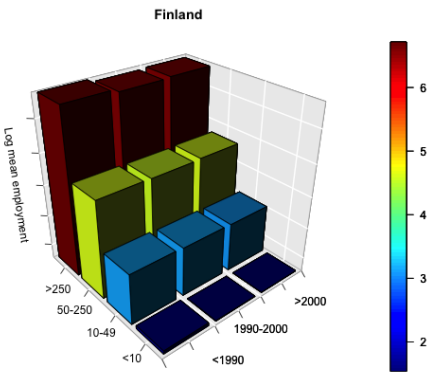
Finland
Log mean employment
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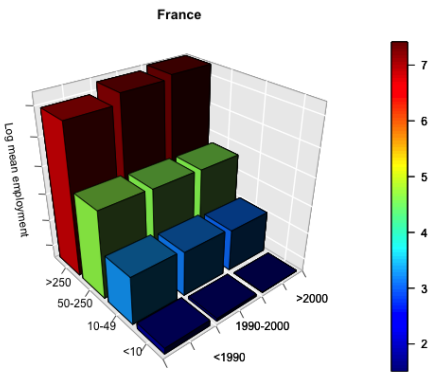
France
Log mean employment
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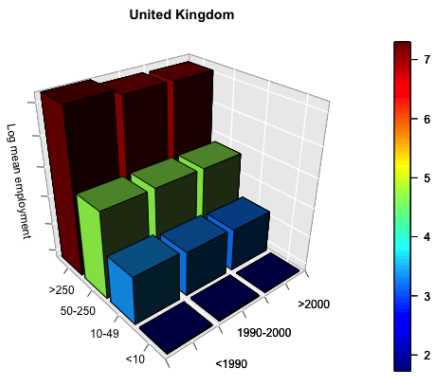
United Kingdom
Log mean employment
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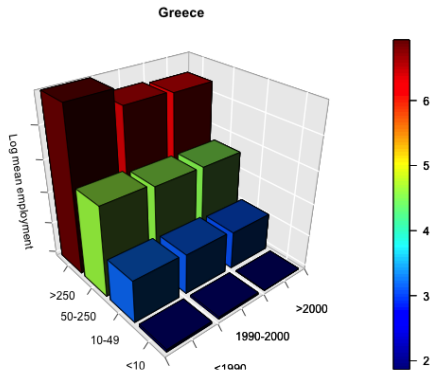
Greece
Log mean employment
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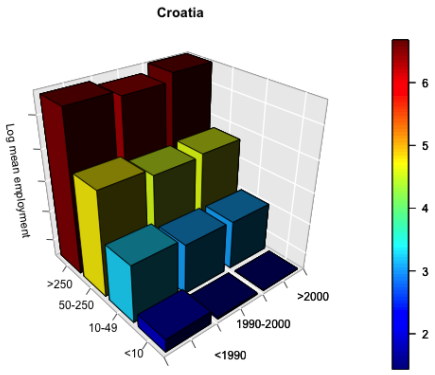
Croatia
Log mean employment
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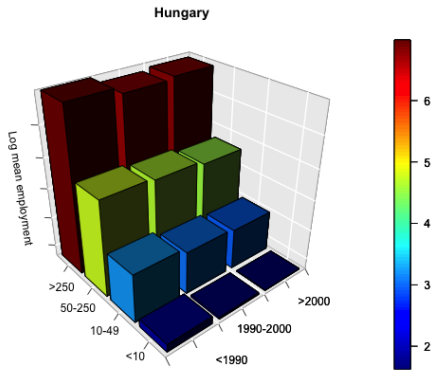
Hungary
Log mean employment
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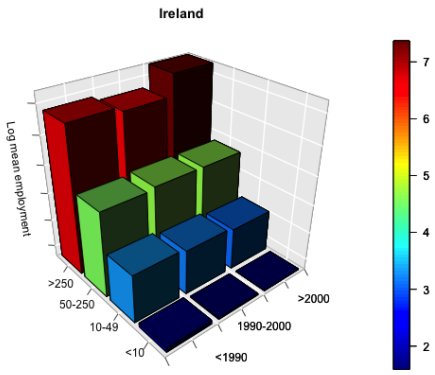
Ireland
Log mean employment
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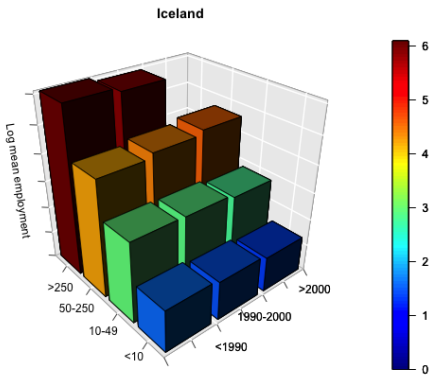
Iceland
Log mean employment
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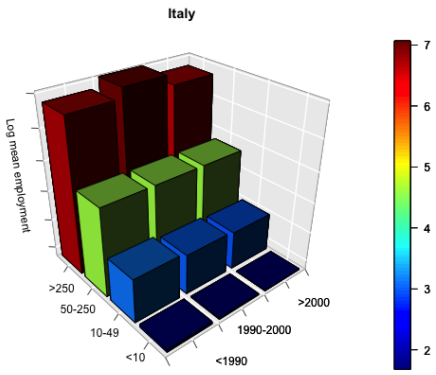
Italy
Log mean employment
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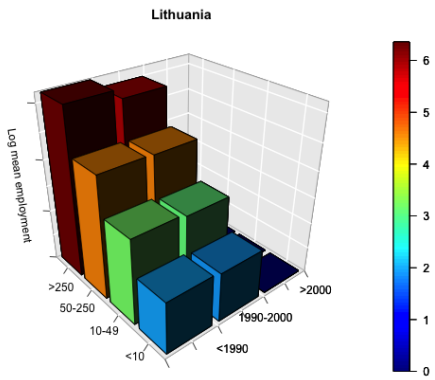
Lithuania
Log mean employment
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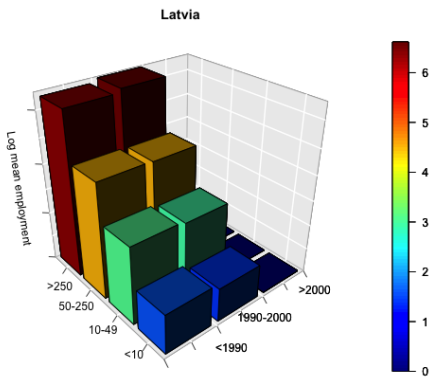
Latvia
Log mean employment
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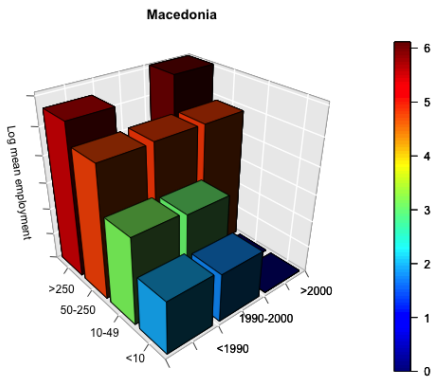
Macedonia
Log mean employment
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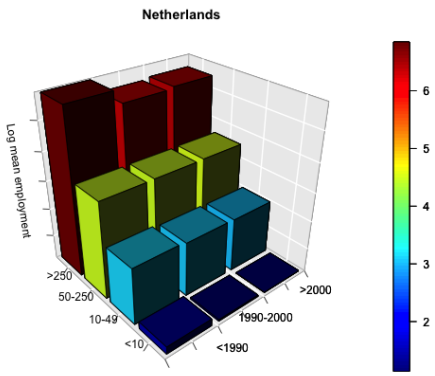
Netherlands
Log mean employment
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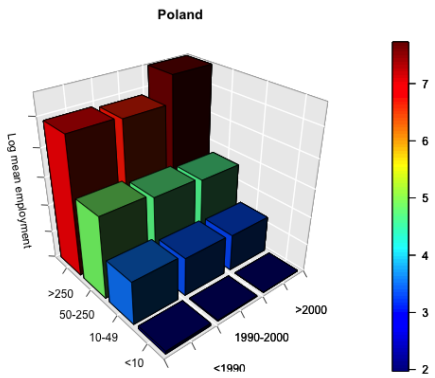
Poland
Log mean employment
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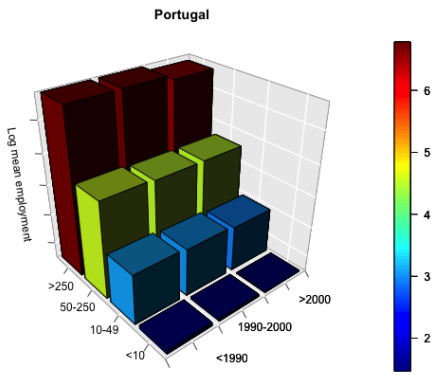
Portugal
Log mean employment
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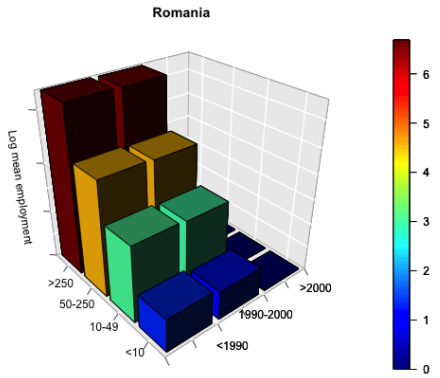
Romania
Log mean employment
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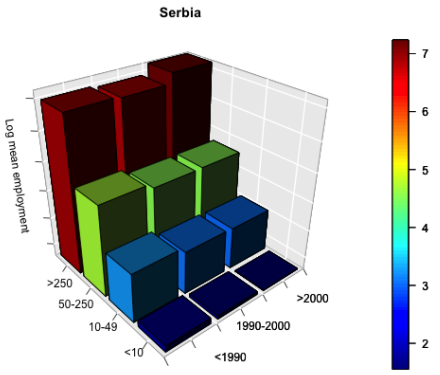
Serbia
Log mean employment
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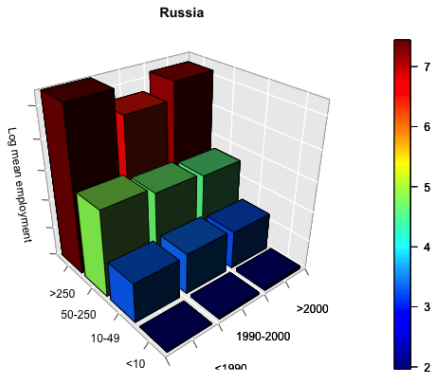
Russia
Log mean employment
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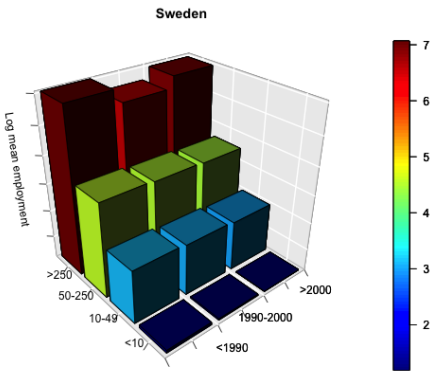
Sweden
Log mean employment
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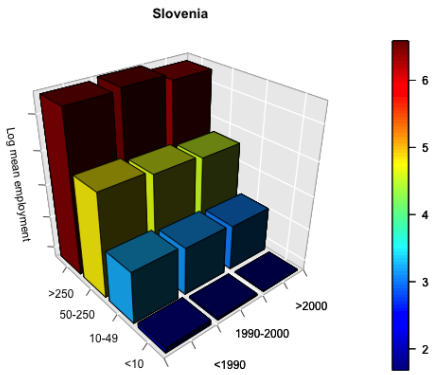
Slovenia
Log mean employment
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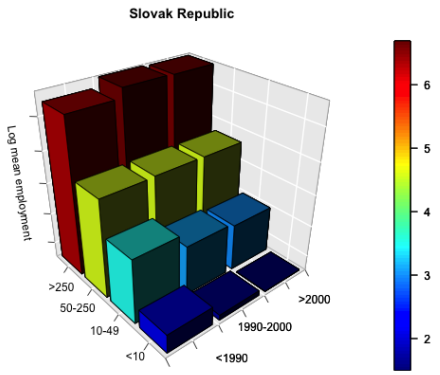
Slovak Republic
Log mean employment
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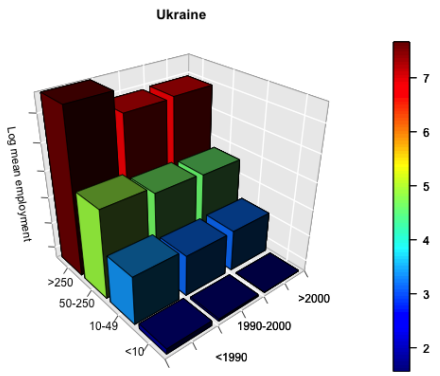
Ukraine
Log mean employment
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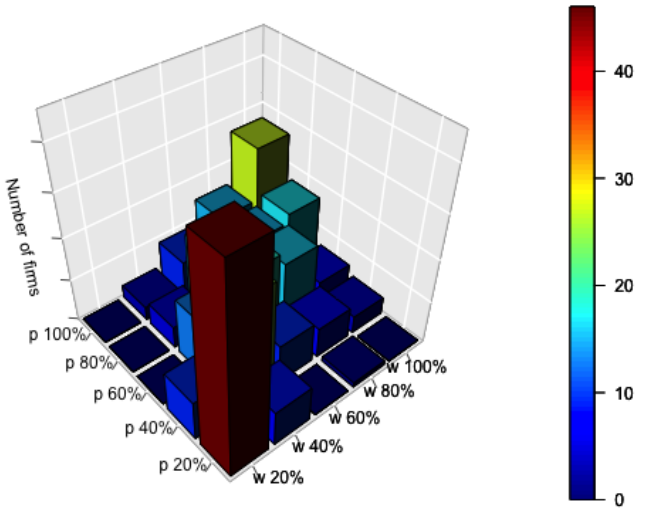
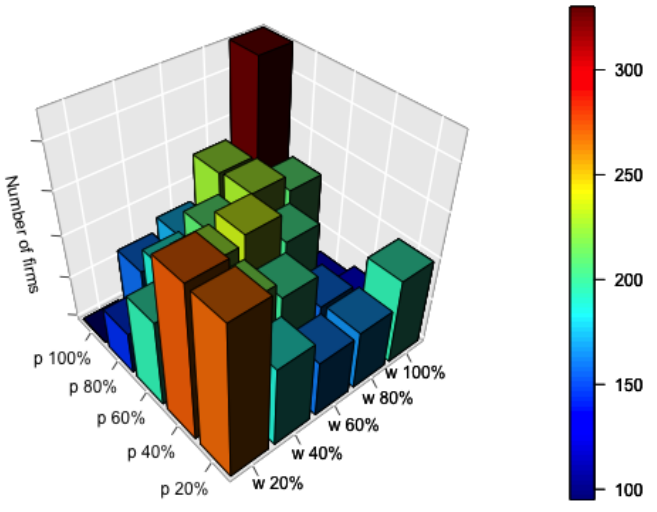
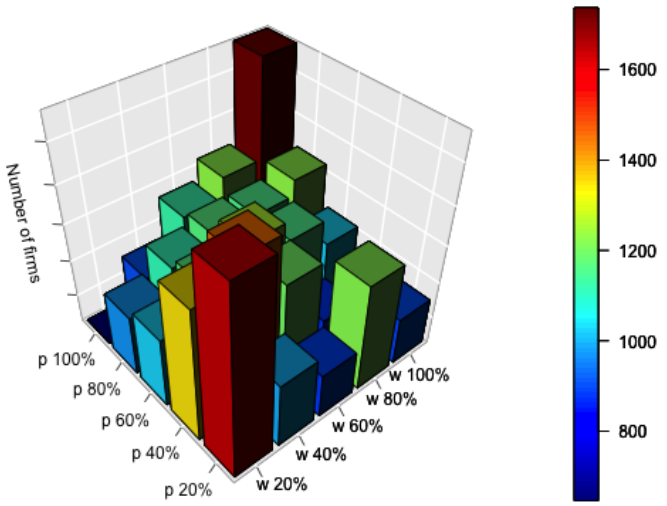
Austria



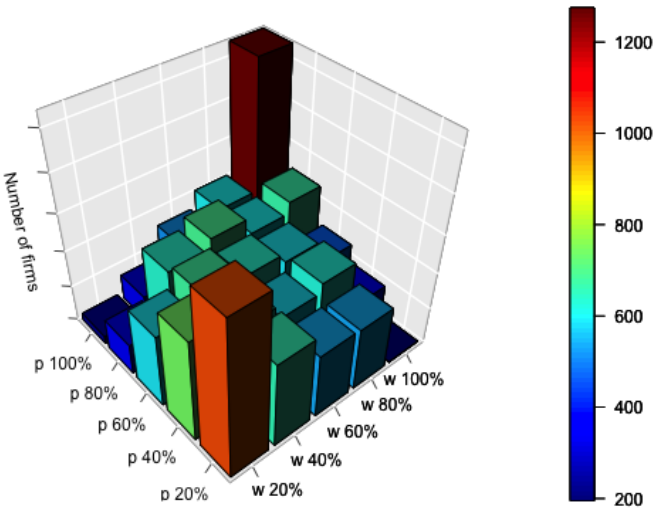
Bosnia and Herzegovina



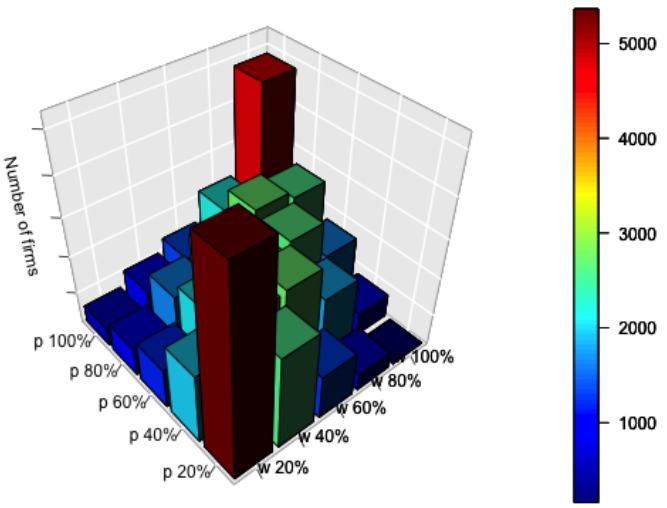
Belgium



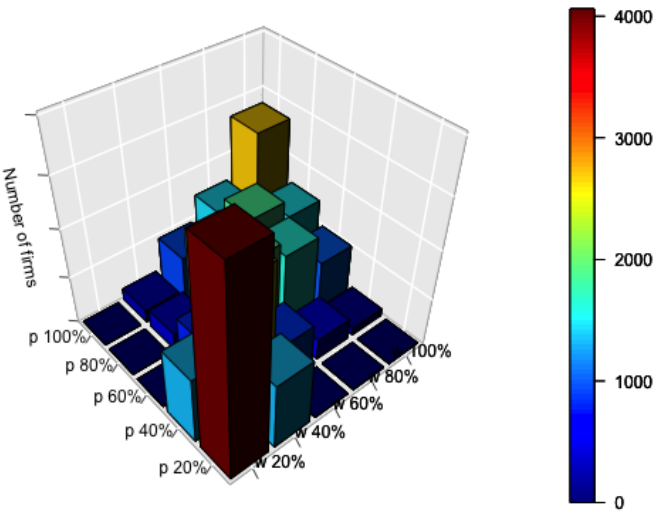
Bulgaria



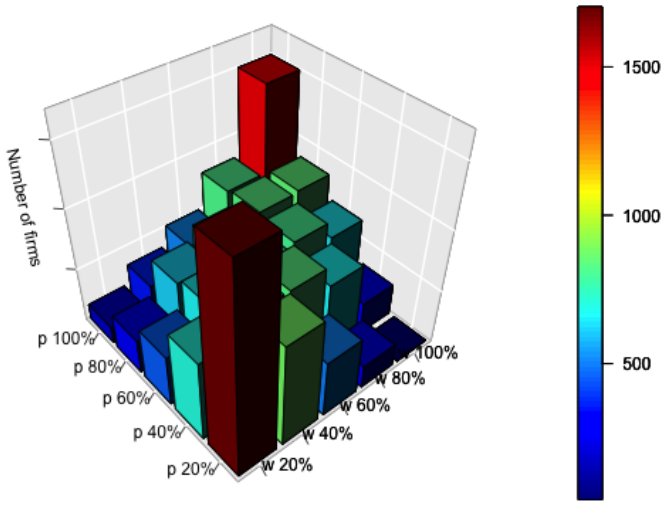
Czech Republic



Germany



Estonia



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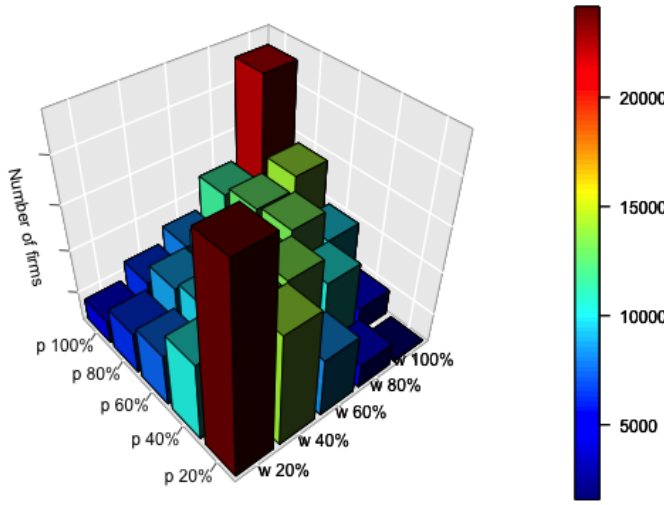
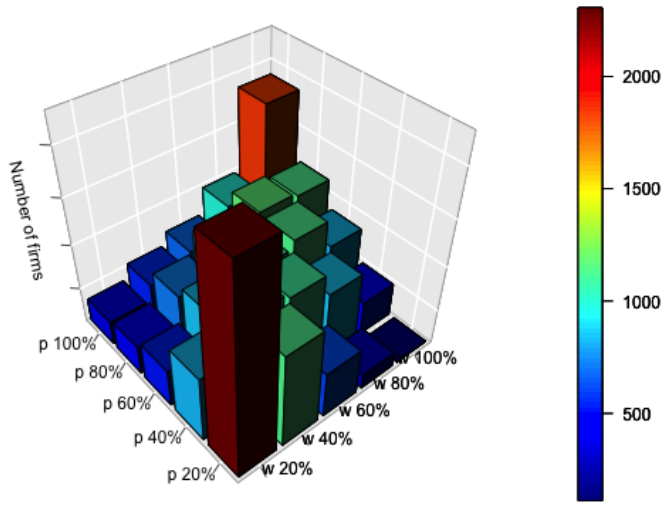


Finland



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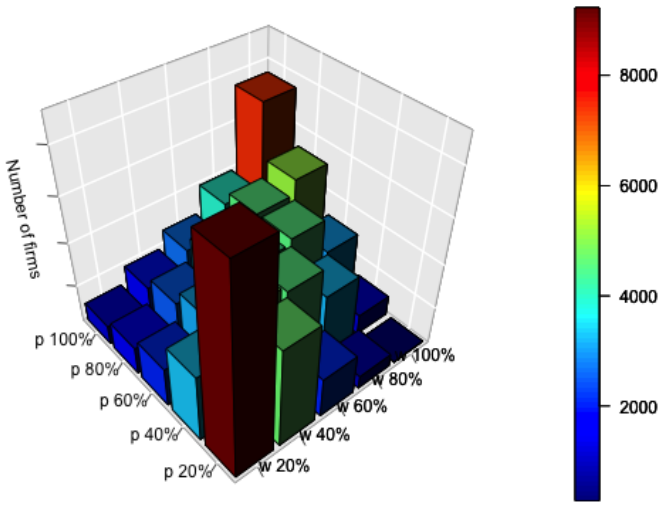

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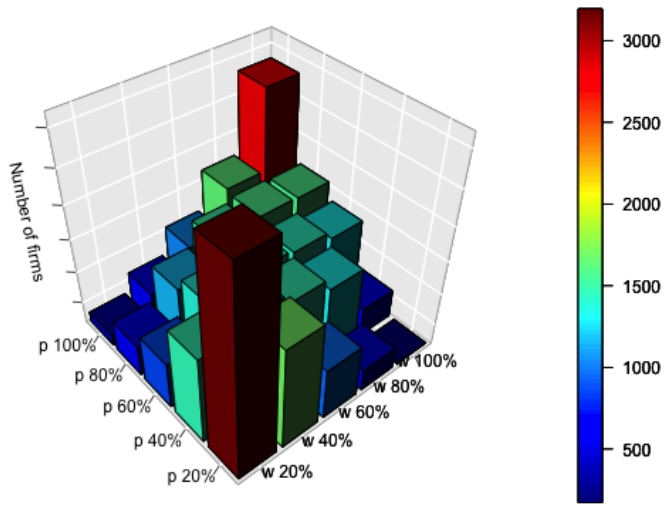
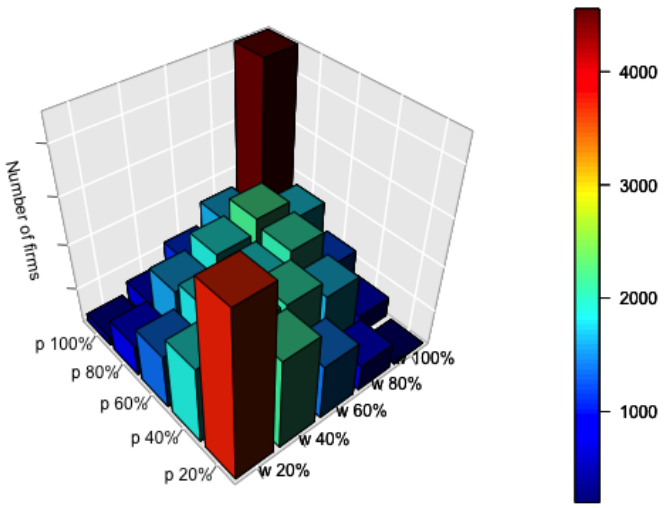
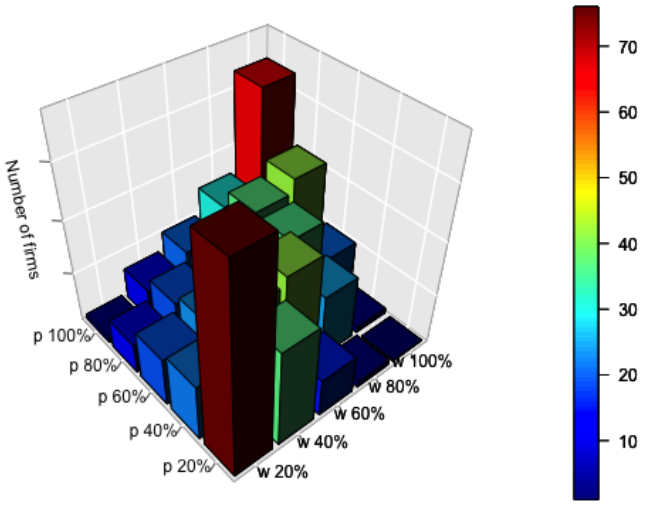


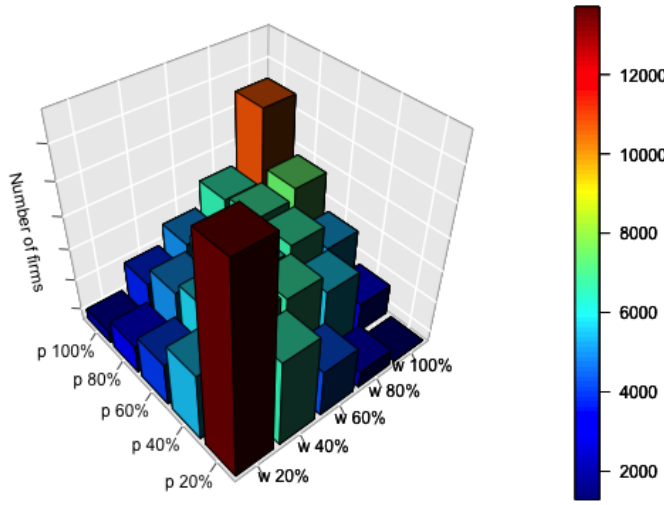
Hungary



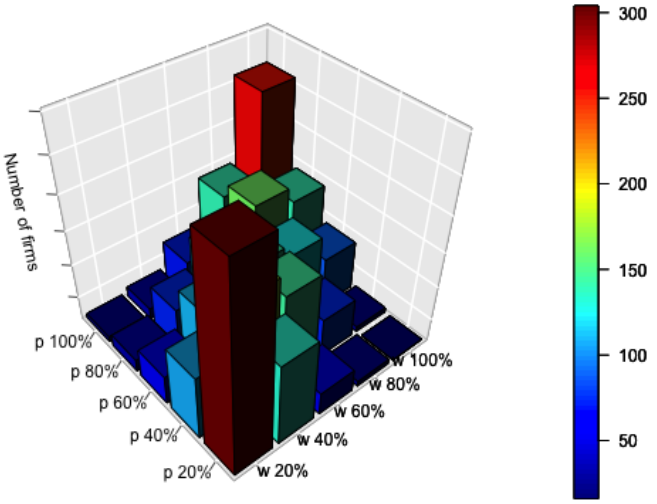
Iceland



Italy



Latvia



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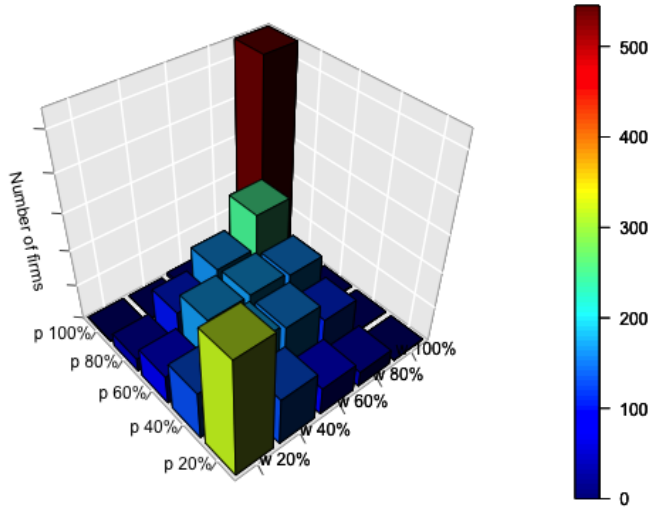
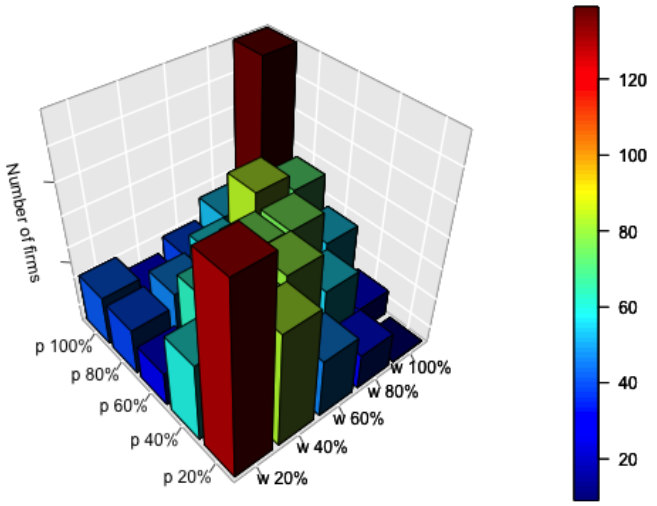
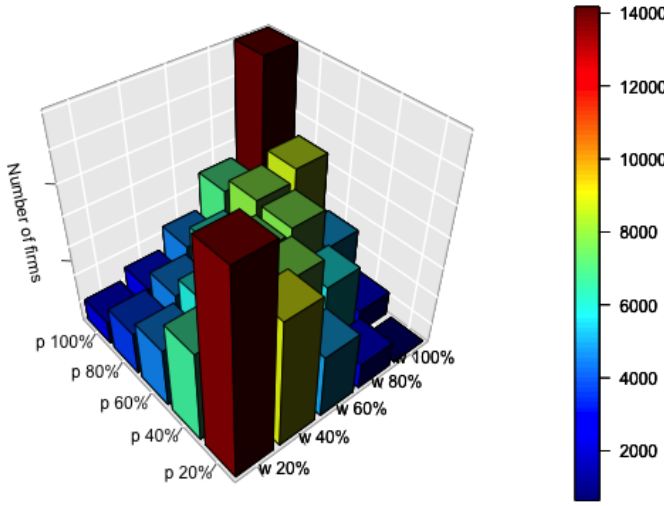


Poland



Portugal



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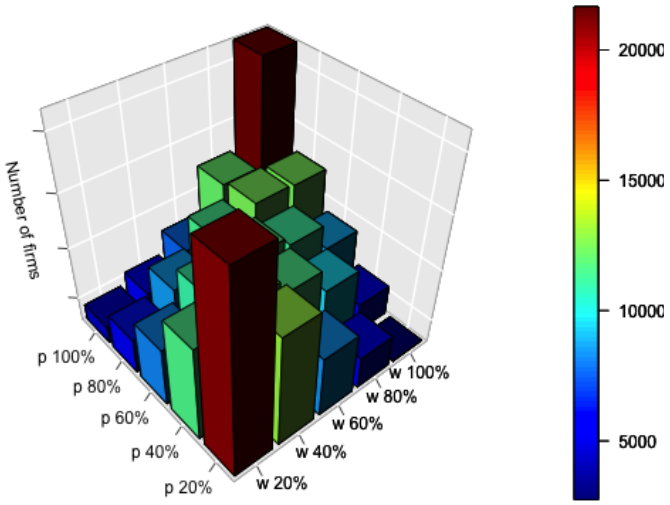
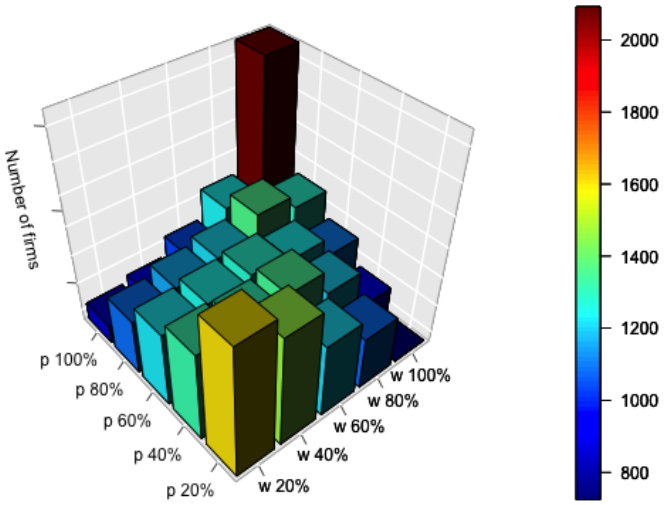
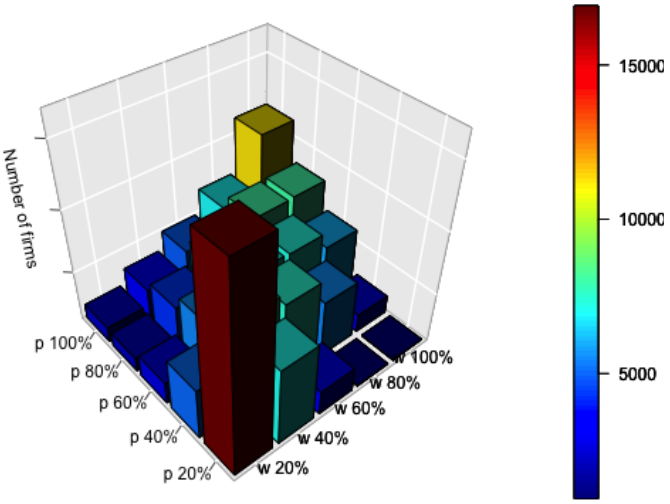


Serbia



Sweden



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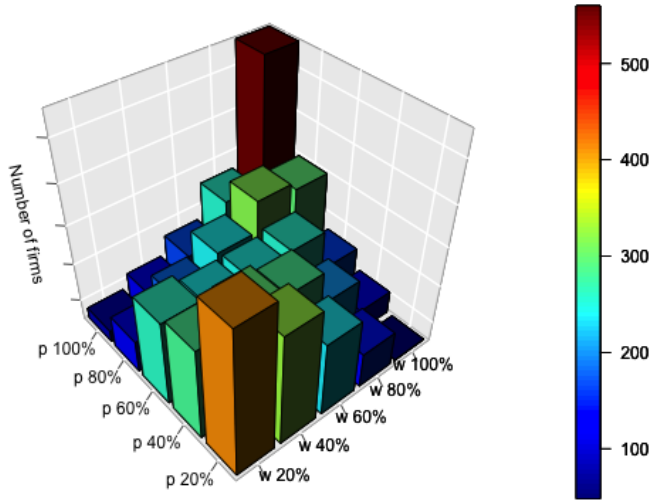
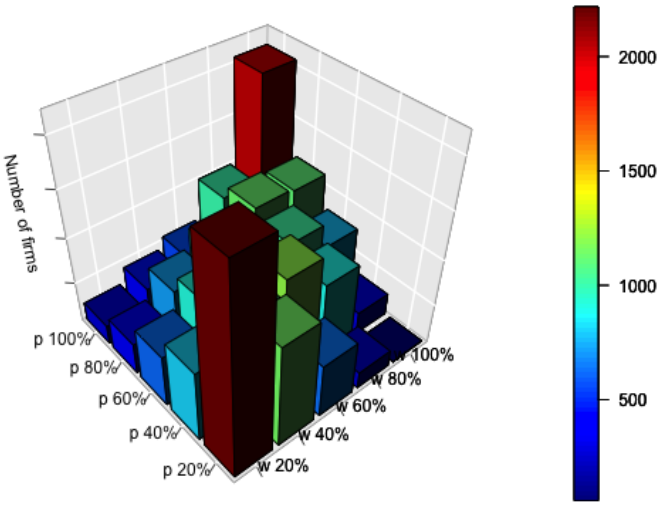


Slovak Republic



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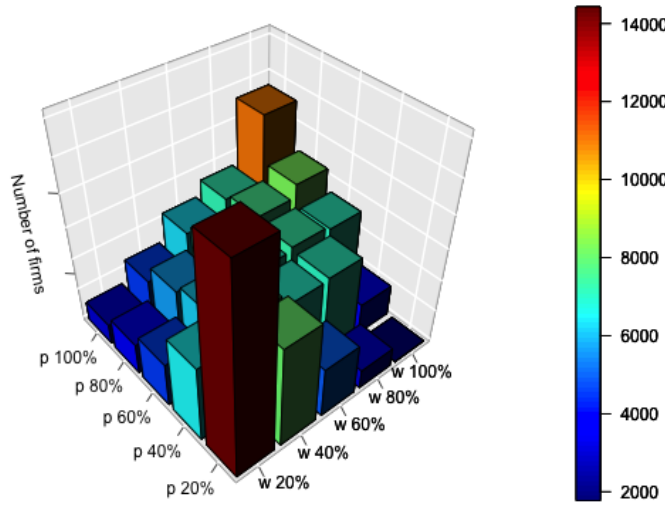

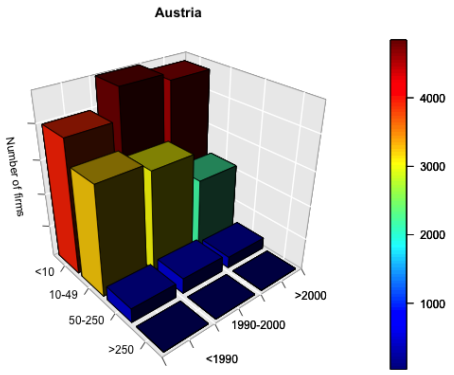
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Number of firms
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1990-2000
>2000
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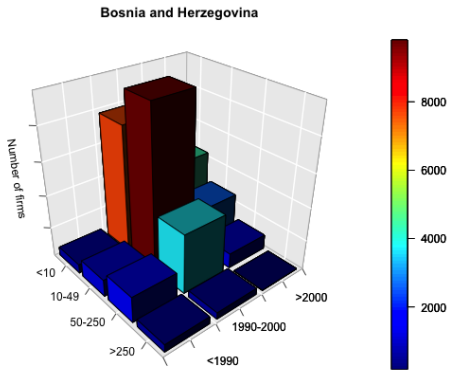
3000
2000
1000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Number of firms
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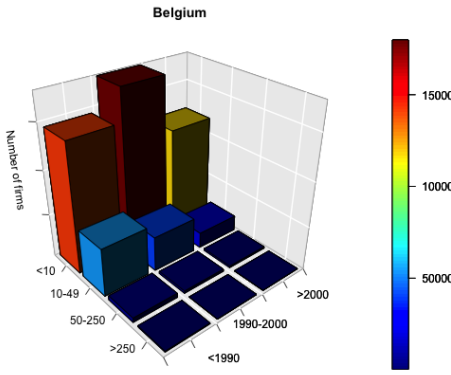
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Number of firms
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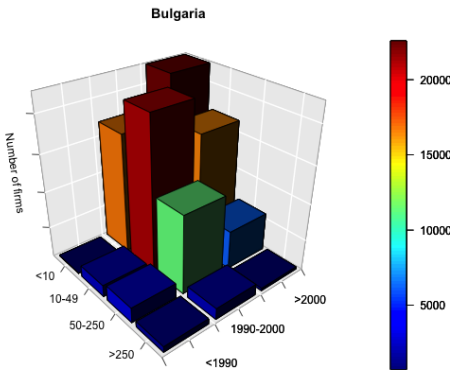
Bulgaria
Number of firms
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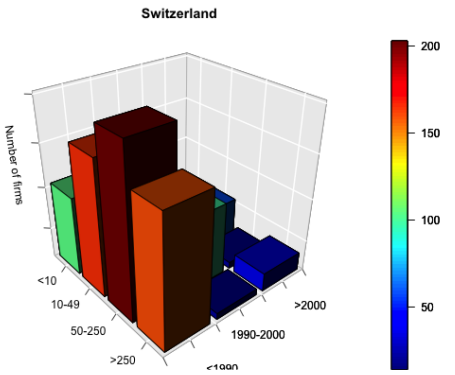
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Number of firms
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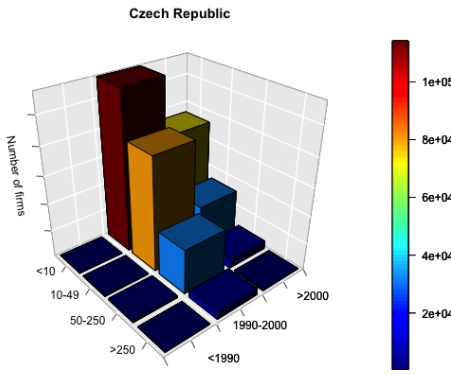
Czech Republic
Number of firms
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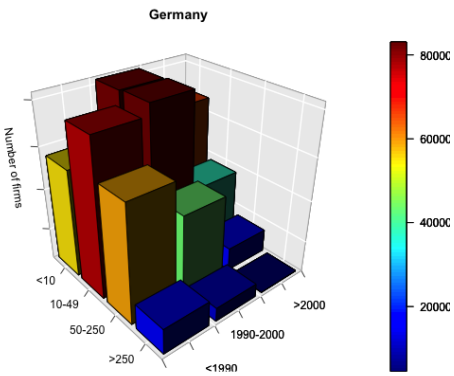
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Number of firms
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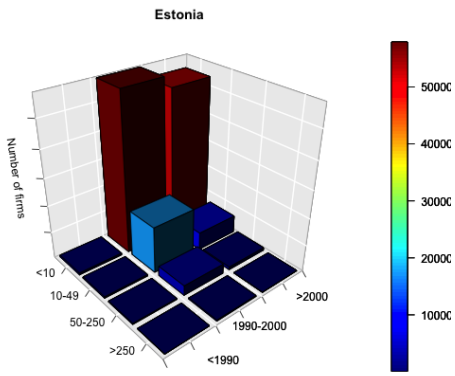
Estonia
Number of firms
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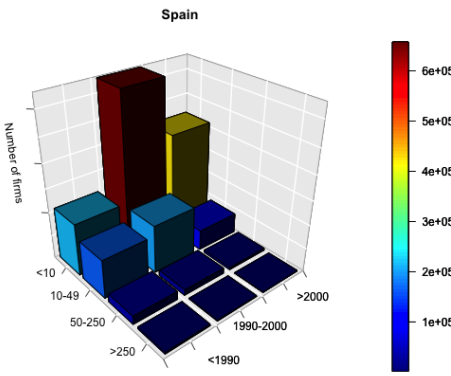
Spain
Number of firms
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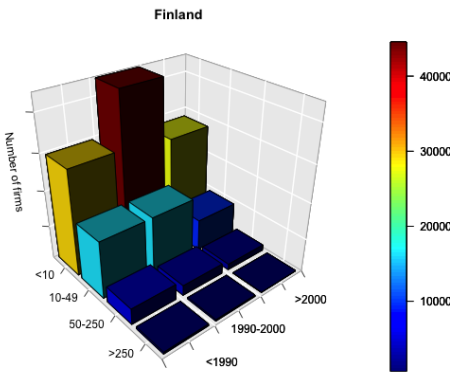
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Number of firms
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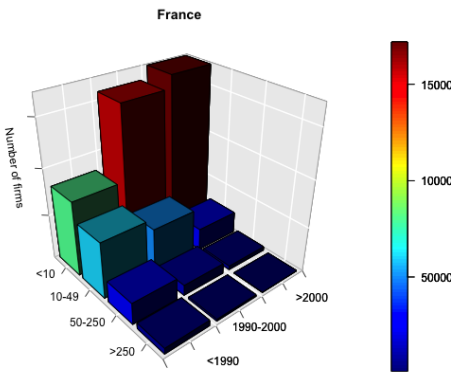
France
Number of firms
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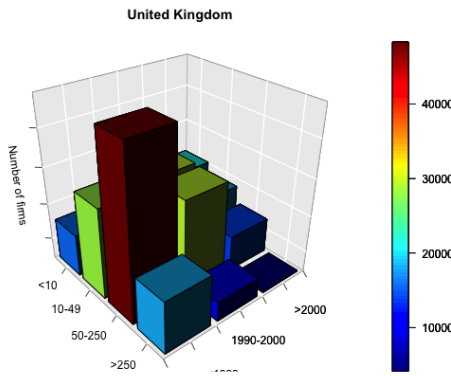
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Number of firms
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20000
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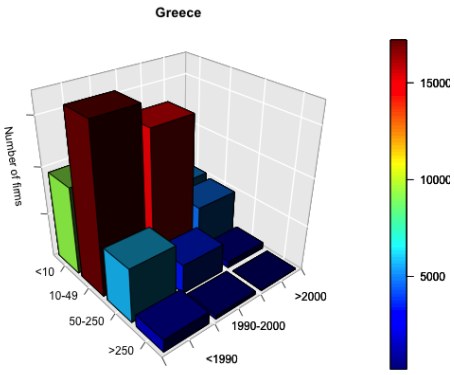
Greece
Number of firms
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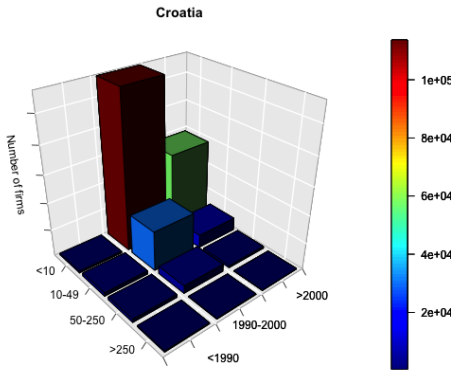
Croatia
Number of firms
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1990-2000
>2000
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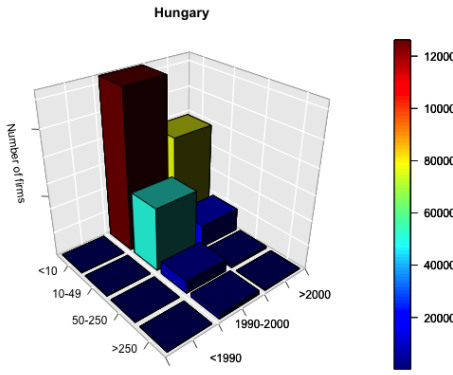
8e+04
6e+04
4e+04
2e+04


Hungary
Number of firms
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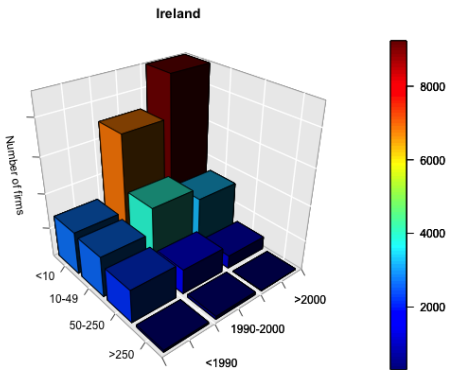
Ireland
Number of firms
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4000
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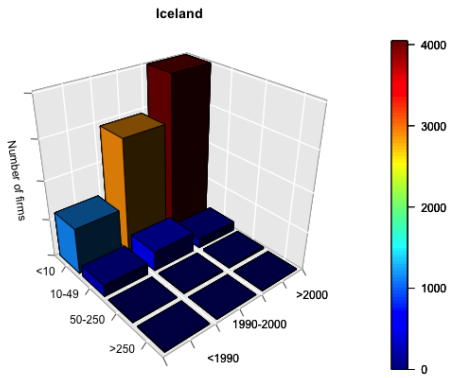
Iceland
Number of firms
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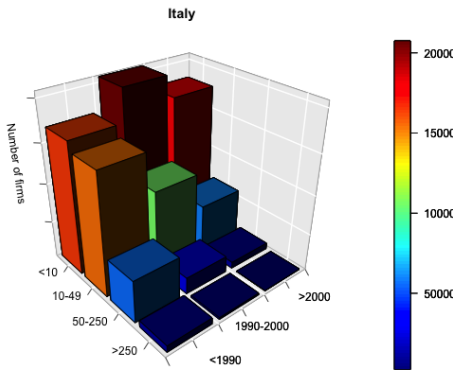
Italy
Number of firms
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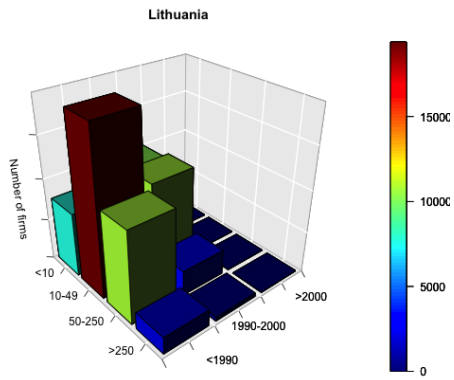
Lithuania
Number of firms
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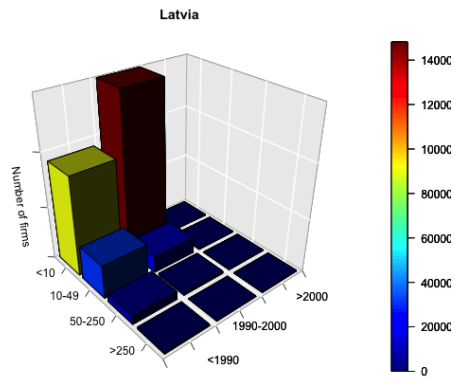
Latvia
Number of firms
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50-250
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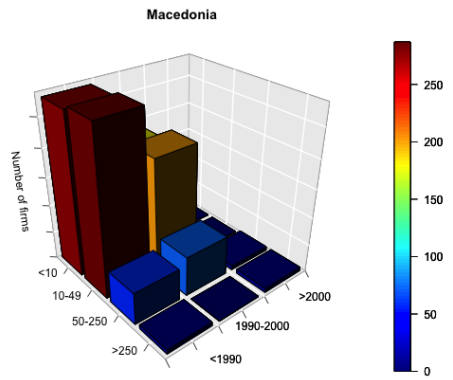
Macedonia
Number of firms
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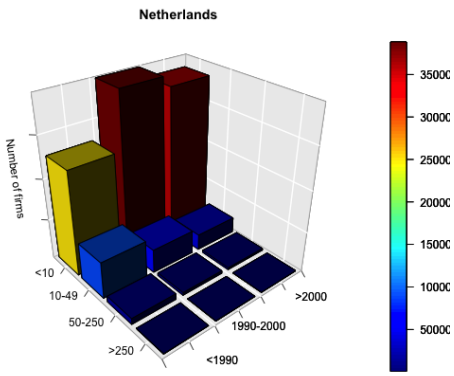
Netherlands
Number of firms
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10-49
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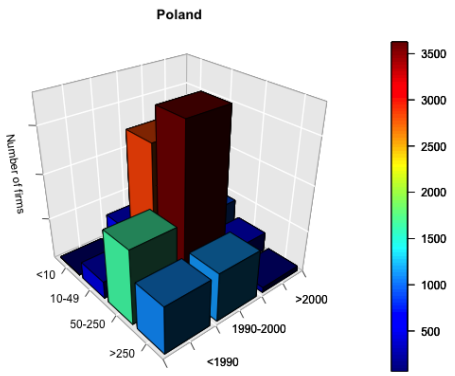
Poland
Number of firms
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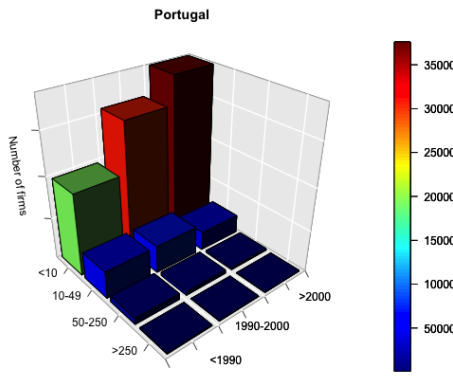
Portugal
Number of firms
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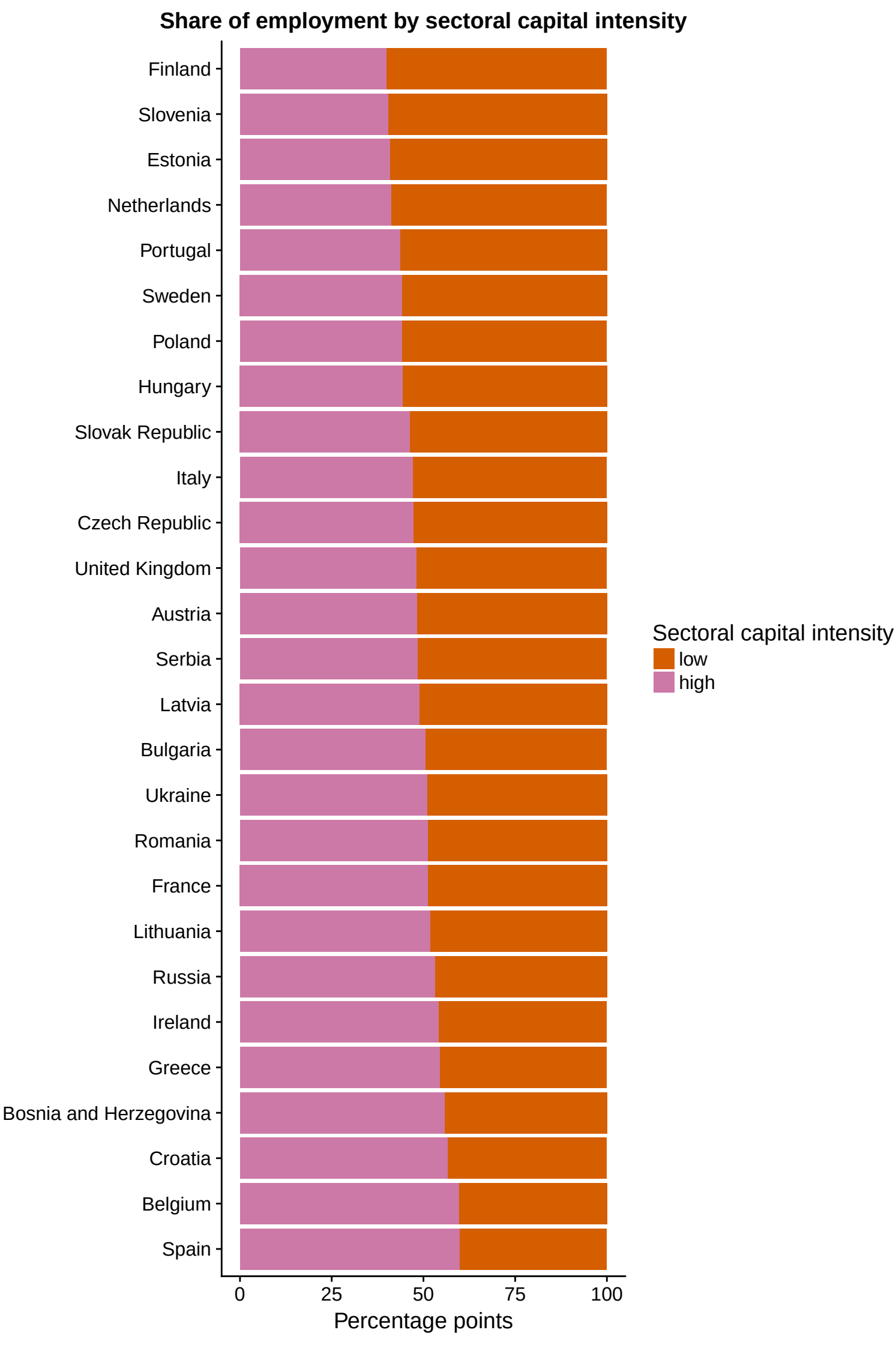
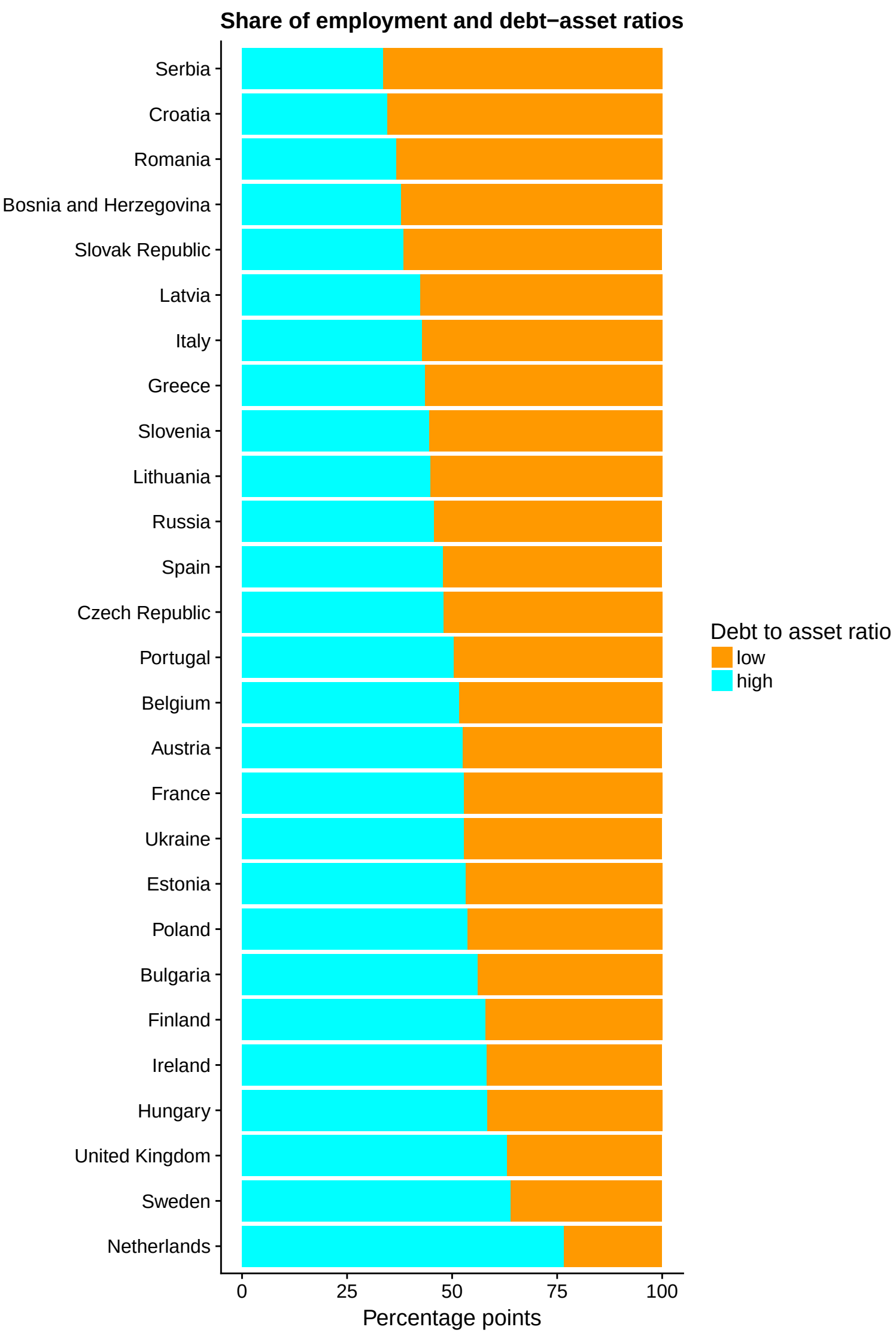
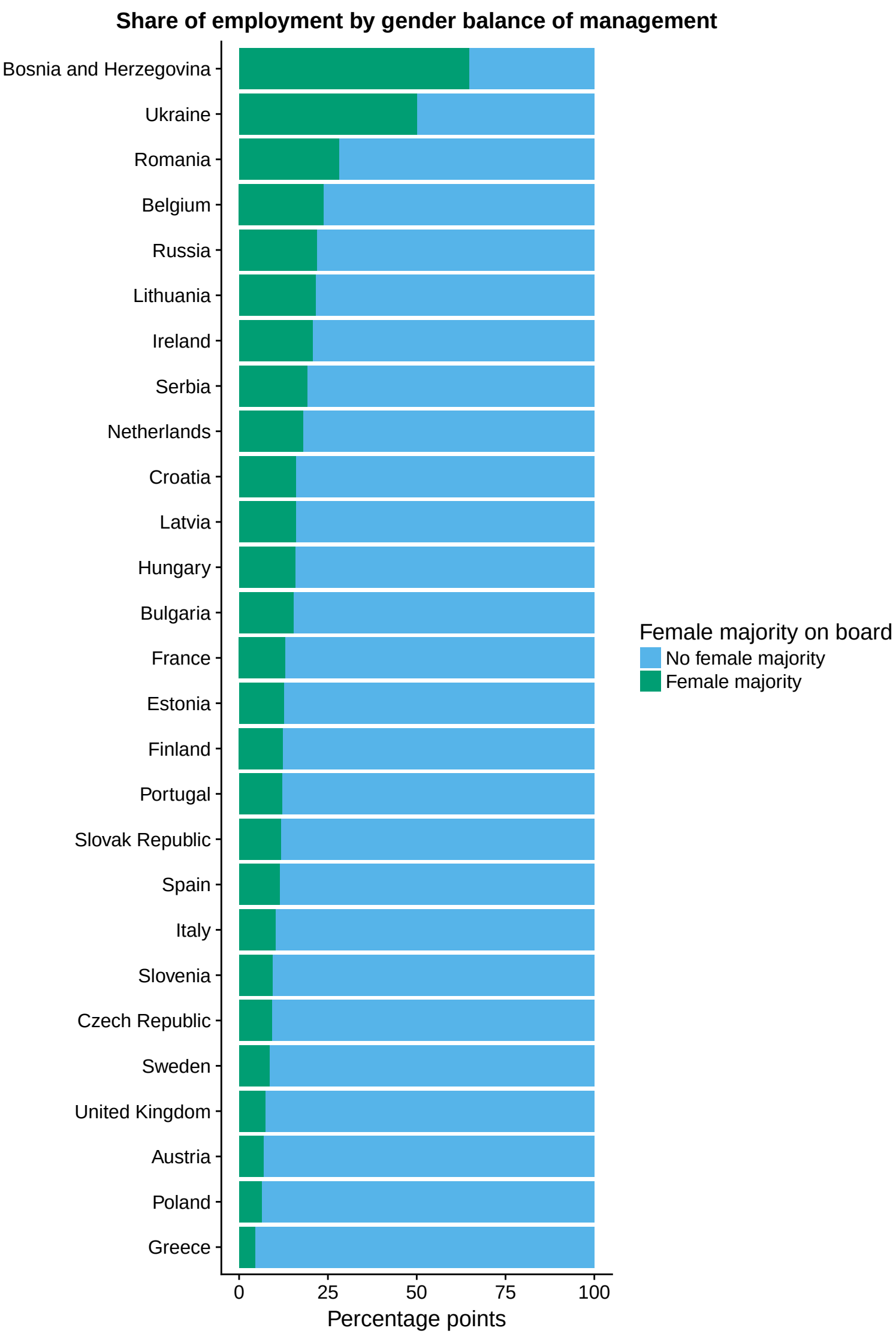
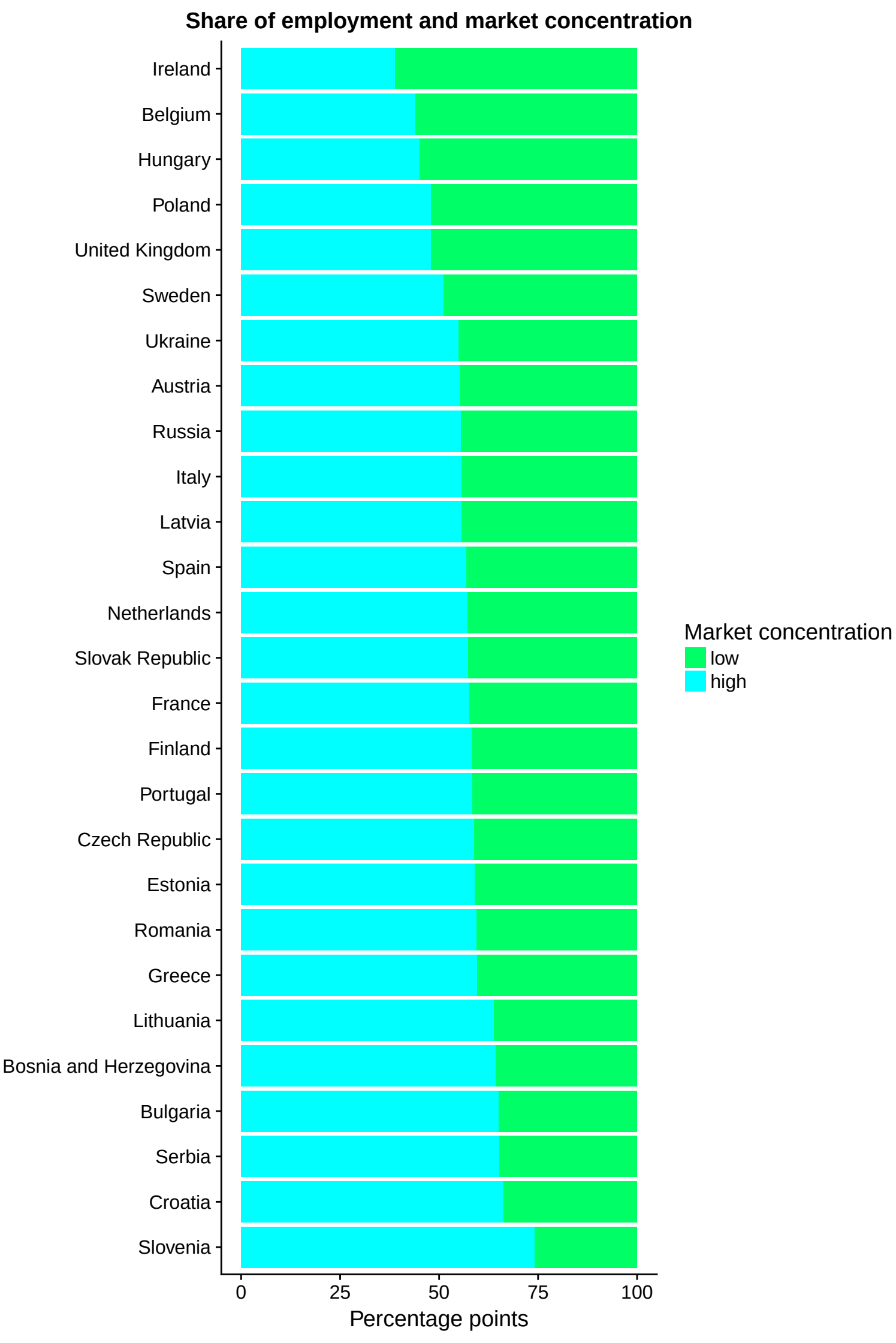
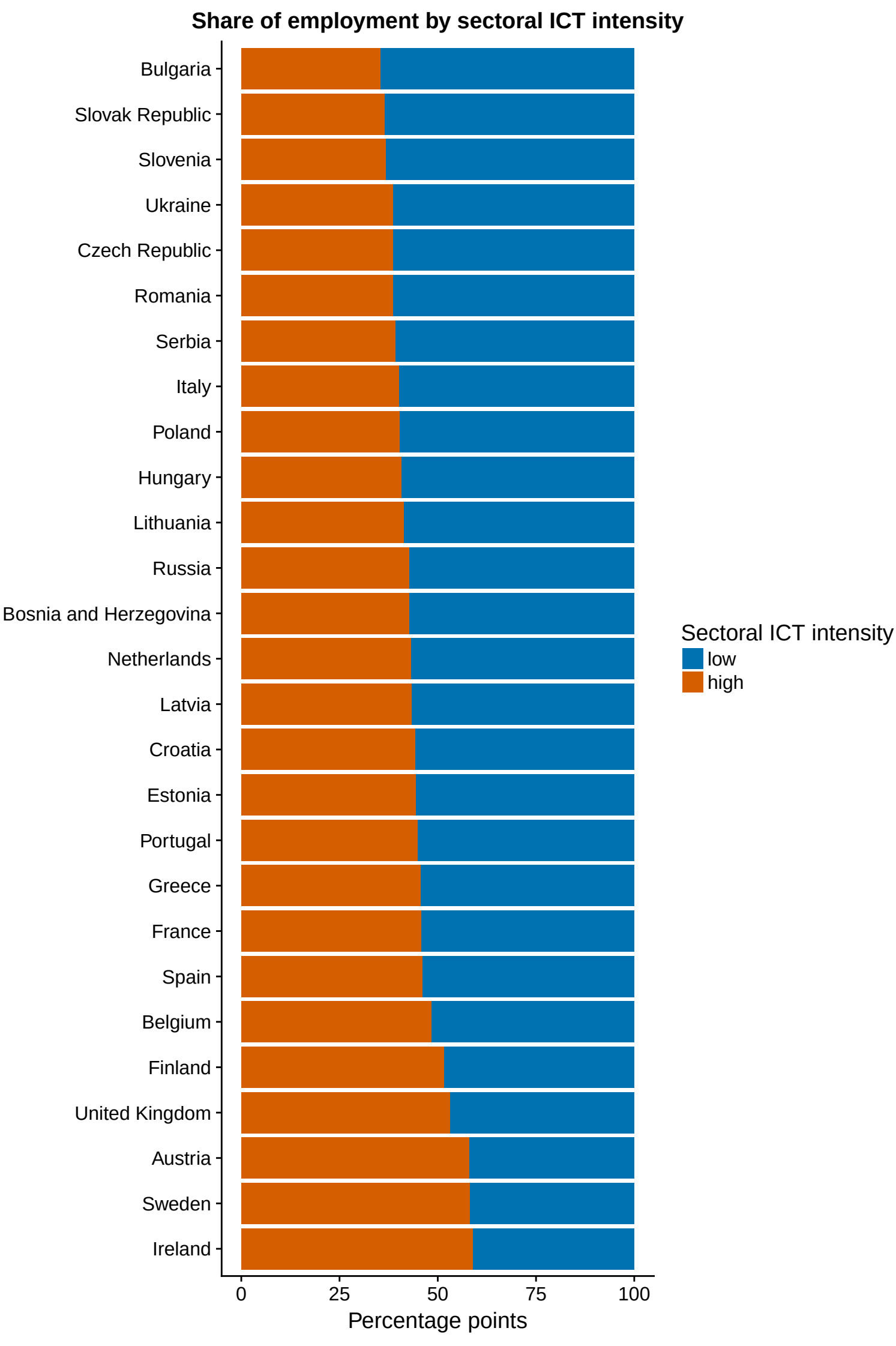
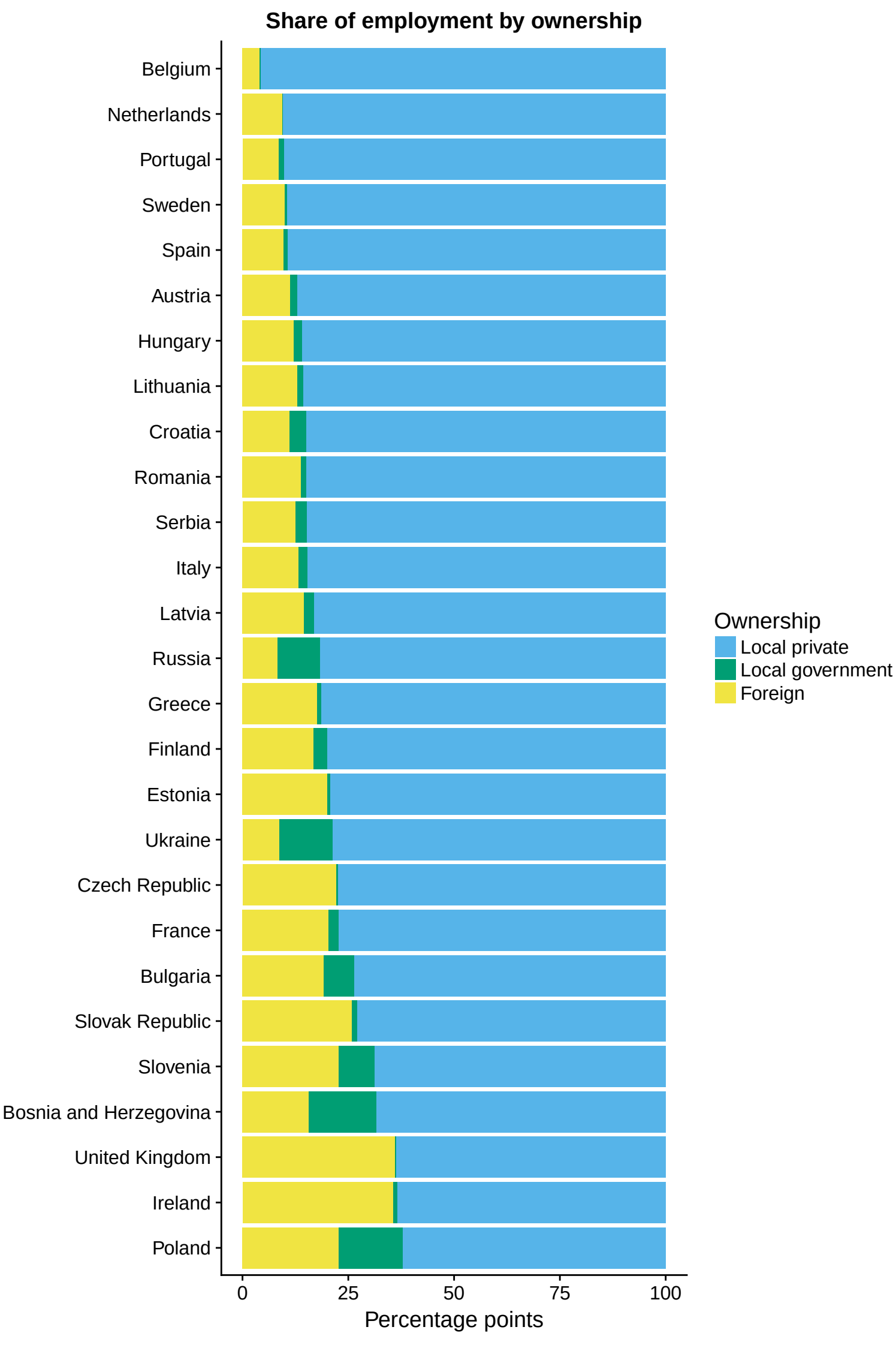

Share of employment by sectoral capital intensity
Finland
Slovenia
Estonia
Netherlands
Portugal
Sweden
Poland
Hungary
Slovak Republic
Italy
Czech Republic
United Kingdom
Austria
Serbia
Latvia
Bulgaria
Ukraine
Romania
France
Lithuania
Russia
Ireland
Greece
Bosnia and Herzegovina
Croatia
Belgium
Spain
0
25
50
75
100
Percentage points
Sectoral capital intensity
low
high

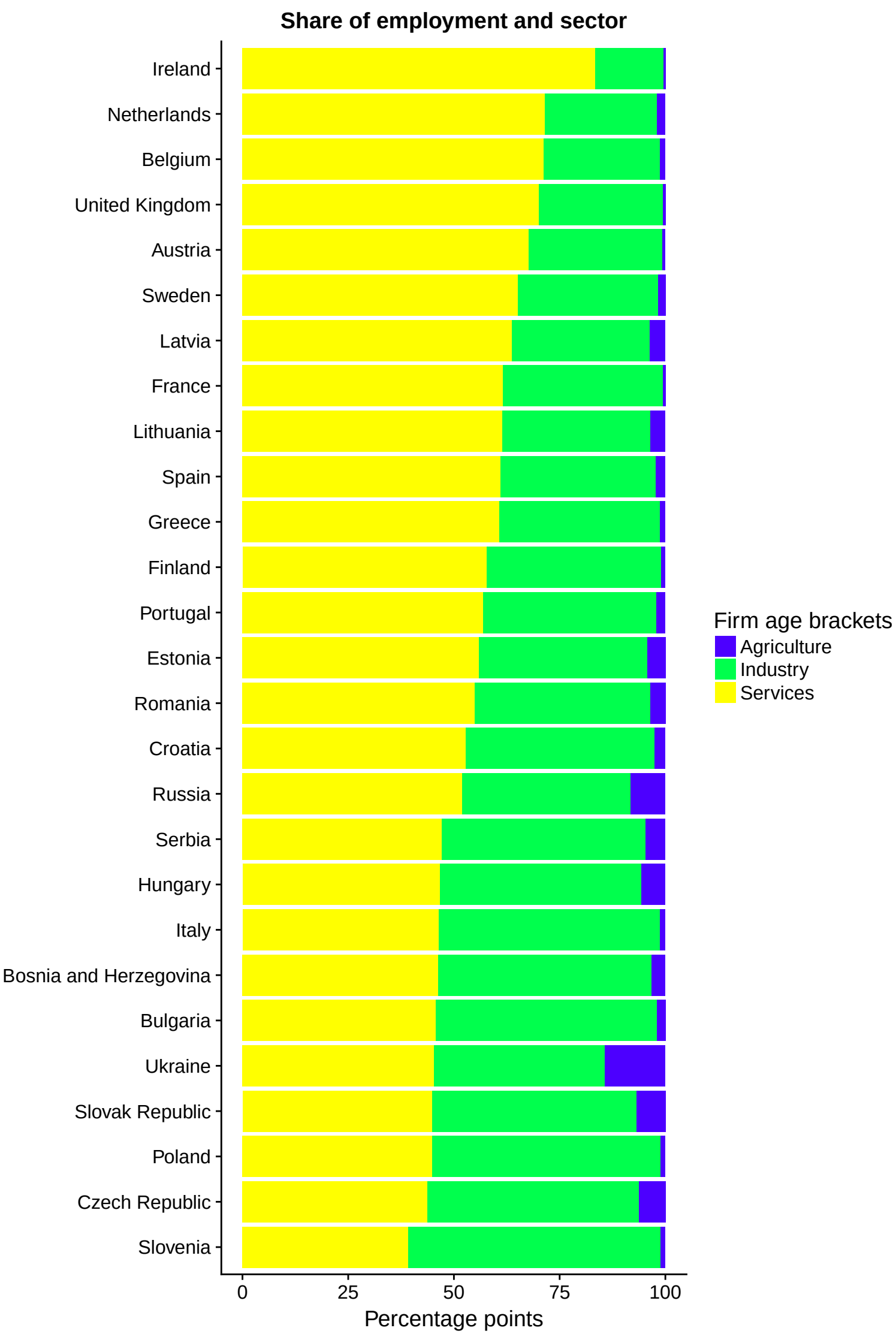

Share of employment and debt−asset ratios
Serbia
Croatia
Romania
Bosnia and Herzegovina
Slovak Republic
Latvia
Italy
Greece
Slovenia
Lithuania
Russia
Spain
Czech Republic
Portugal
Belgium
Austria
France
Ukraine
Estonia
Poland
Bulgaria
Finland
Ireland
Hungary
United Kingdom
Sweden
Netherlands
0
25
50
75
100
Percentage points
Debt to asset ratio
low
high

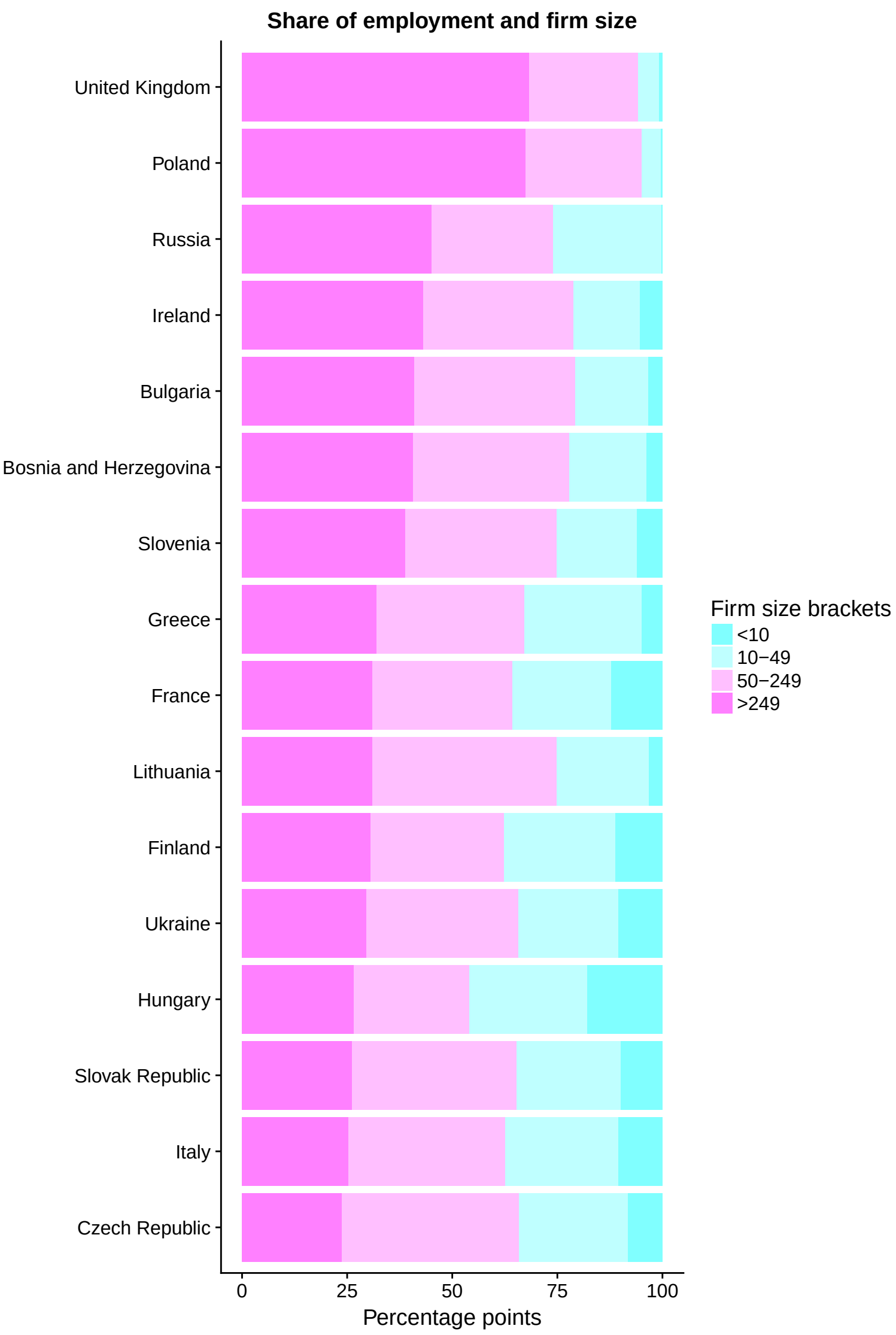

Share of employment by gender balance of management
Bosnia and Herzegovina
Ukraine
Romania
Belgium
Russia
Lithuania
Ireland
Serbia
Netherlands
Croatia
Latvia
Hungary
Bulgaria
France
Estonia
Finland
Portugal
Slovak Republic
Spain
Italy
Slovenia
Czech Republic
Sweden
United Kingdom
Austria
Poland
Greece
0
25
50
75
100
Percentage points
Female majority on board
No female majority
Female majority

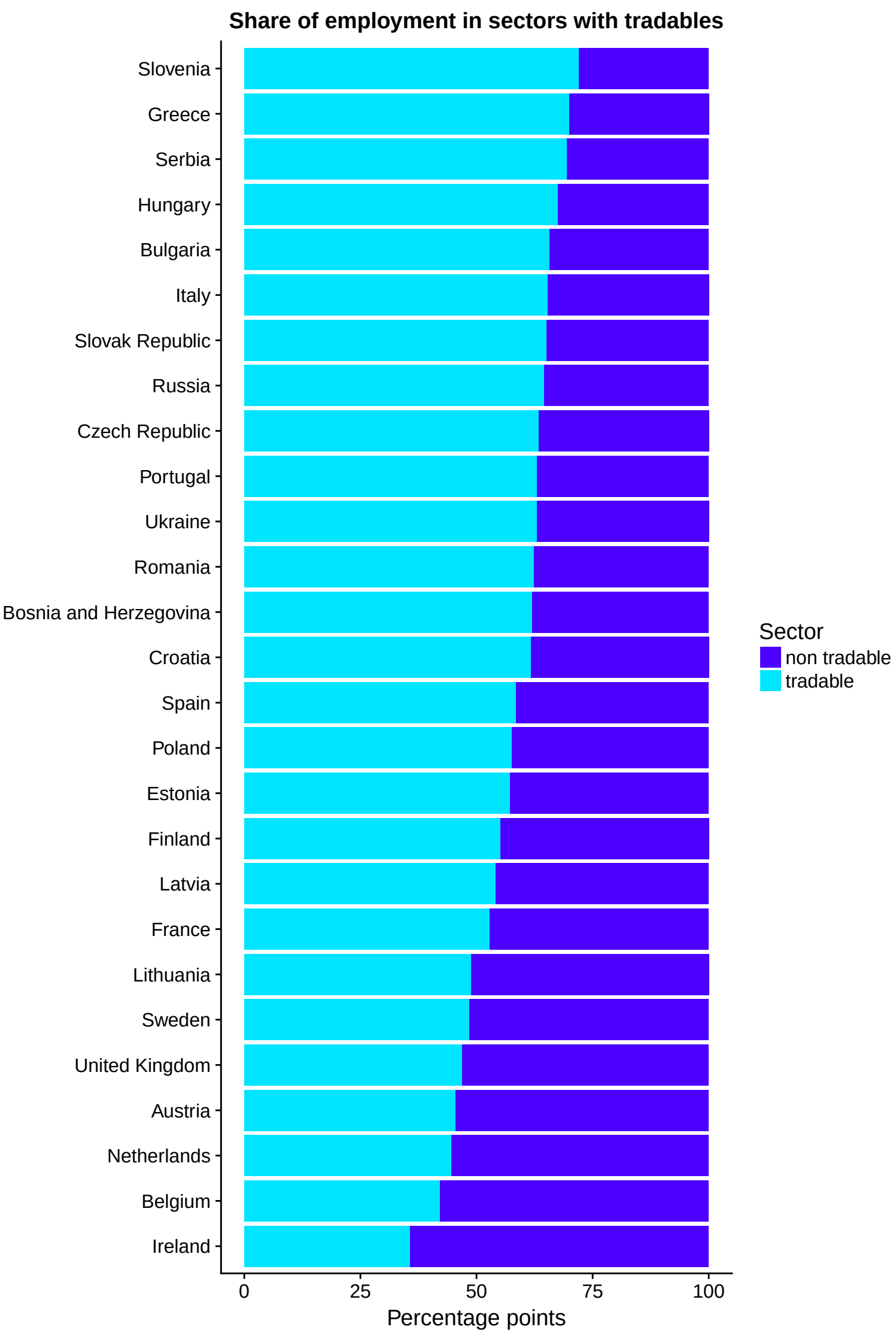

Share of employment and market concentration
Ireland
Belgium
Hungary
Poland
United Kingdom
Sweden
Ukraine
Austria
Russia
Italy
Latvia
Spain
Netherlands
Slovak Republic
France
Finland
Portugal
Czech Republic
Estonia
Romania
Greece
Lithuania
Bosnia and Herzegovina
Bulgaria
Serbia
Croatia
Slovenia
0
25
50
75
100
Percentage points
Market concentration
low
high

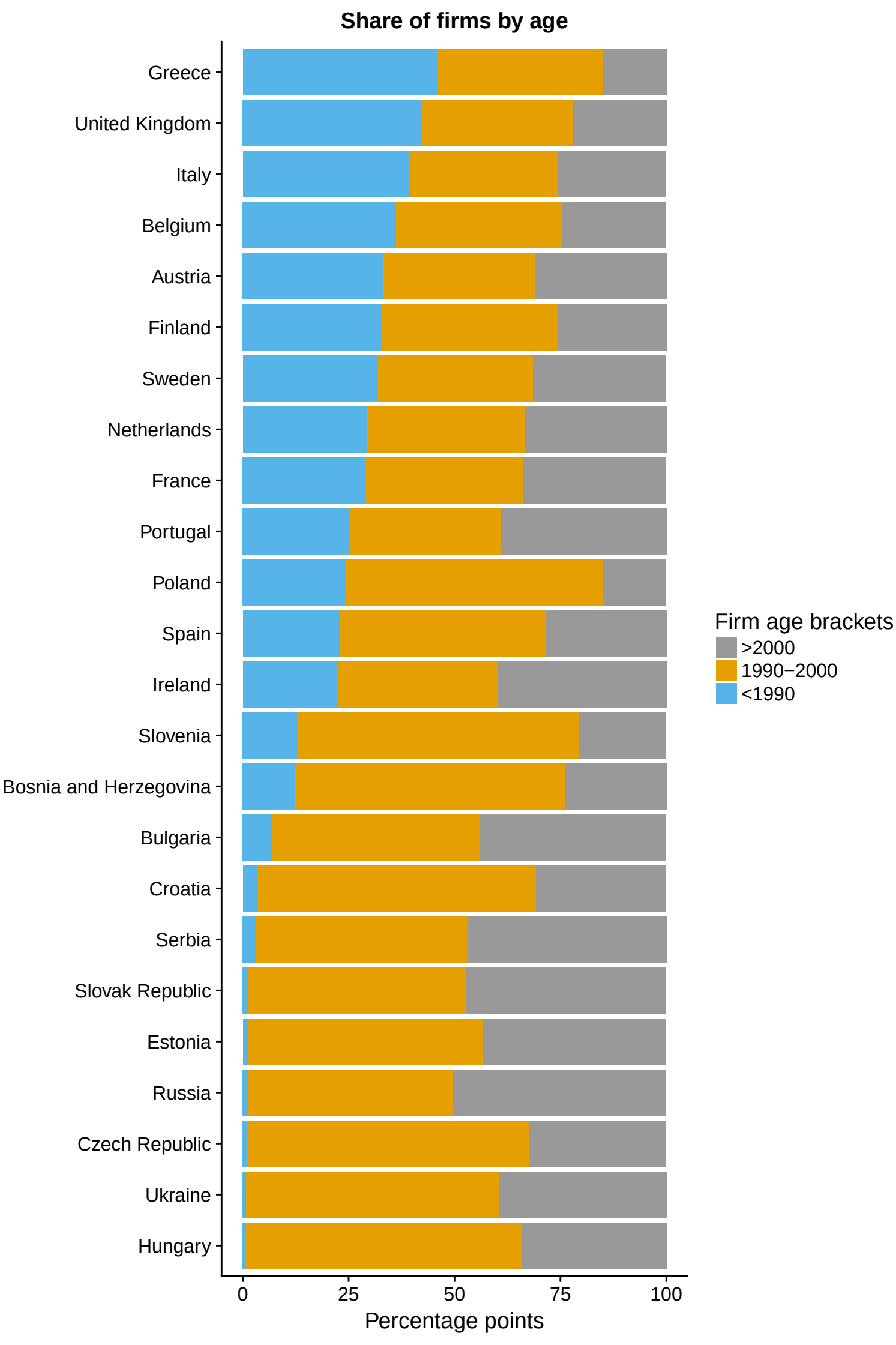

Share of employment by sectoral ICT intensity
Bulgaria
Slovak Republic
Slovenia
Ukraine
Czech Republic
Romania
Serbia
Italy
Poland
Hungary
Lithuania
Russia
Bosnia and Herzegovina
Netherlands
Latvia
Croatia
Estonia
Portugal
Greece
France
Spain
Belgium
Finland
United Kingdom
Austria
Sweden
Ireland
0
25
50
75
100
Percentage points
Sectoral ICT intensity
low
high

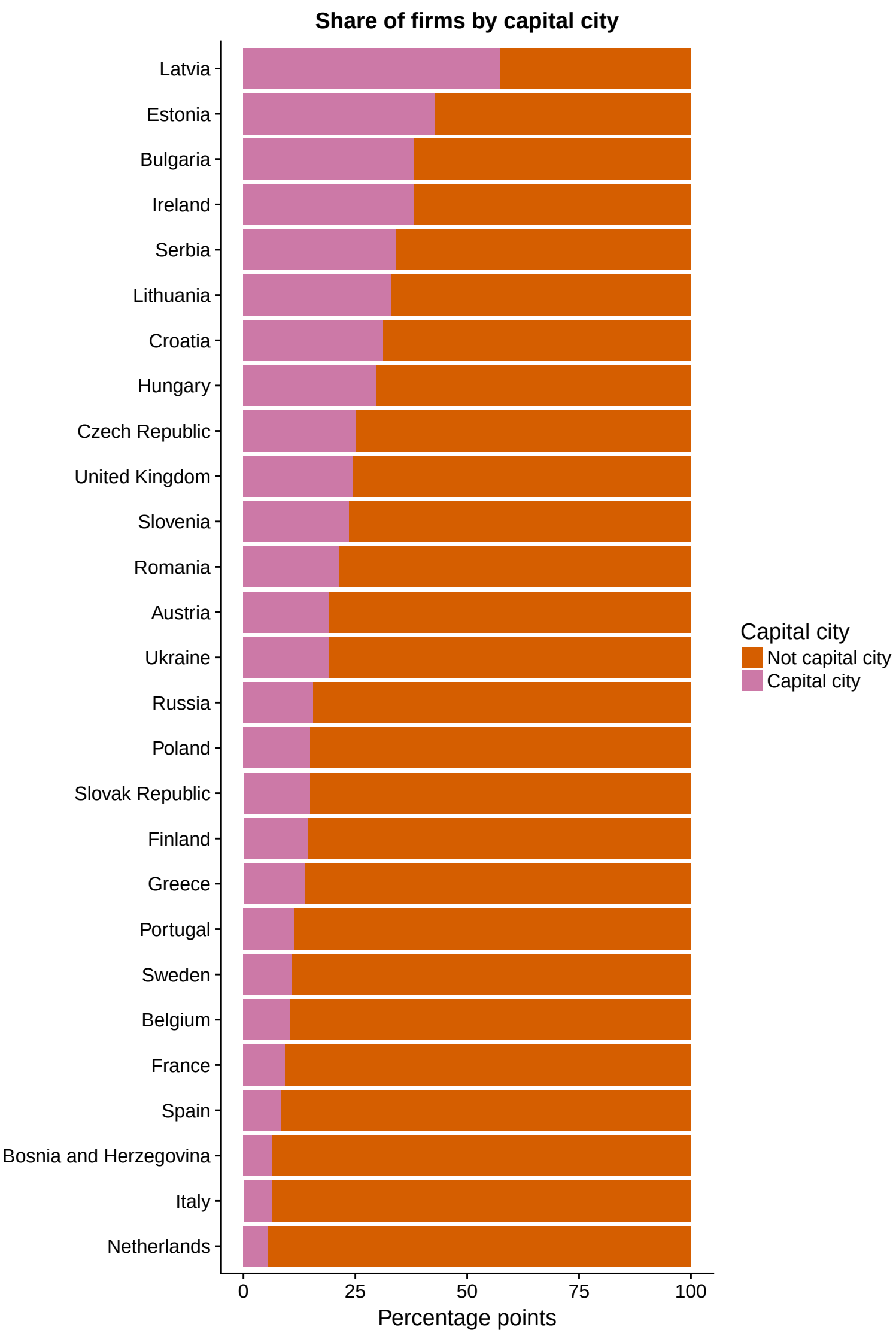

Share of employment by ownership
Belgium
Netherlands
Portugal
Sweden
Spain
Austria
Hungary
Lithuania
Croatia
Romania
Serbia
Italy
Latvia
Russia
Greece
Finland
Estonia
Ukraine
Czech Republic
France
Bulgaria
Slovak Republic
Slovenia
Bosnia and Herzegovina
United Kingdom
Ireland
Poland
0
25
50
75
100
Percentage points
Ownership
Local private
Local government
Foreign

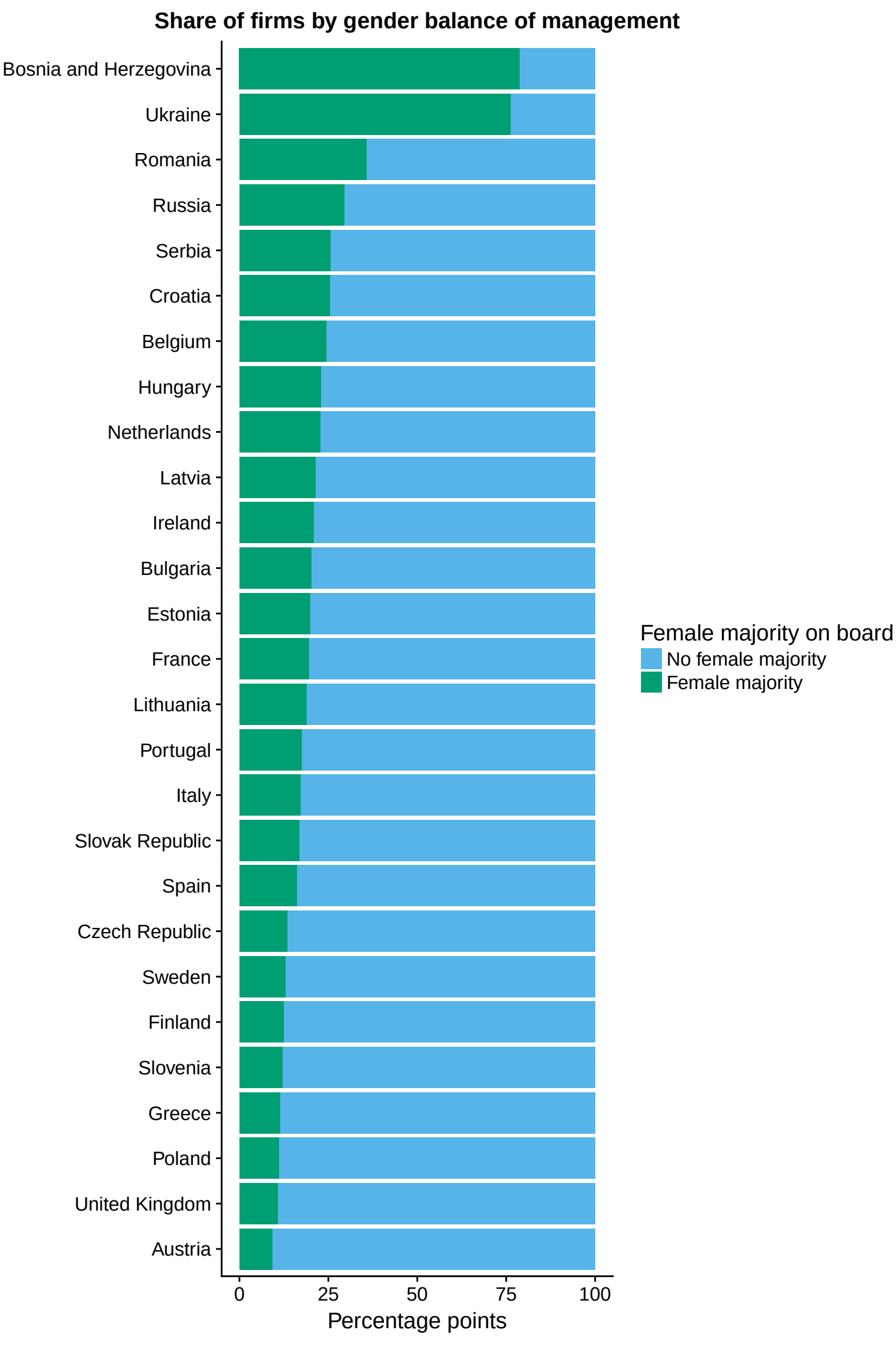

Share of employment and sector
Ireland
Netherlands
Belgium
United Kingdom
Austria
Sweden
Latvia
France
Lithuania
Spain
Greece
Finland
Portugal
Estonia
Romania
Croatia
Russia
Serbia
Hungary
Italy
Bosnia and Herzegovina
Bulgaria
Ukraine
Slovak Republic
Poland
Czech Republic
Slovenia
0
25
50
75
100
Percentage points
Firm age brackets
Agriculture
Industry
Services

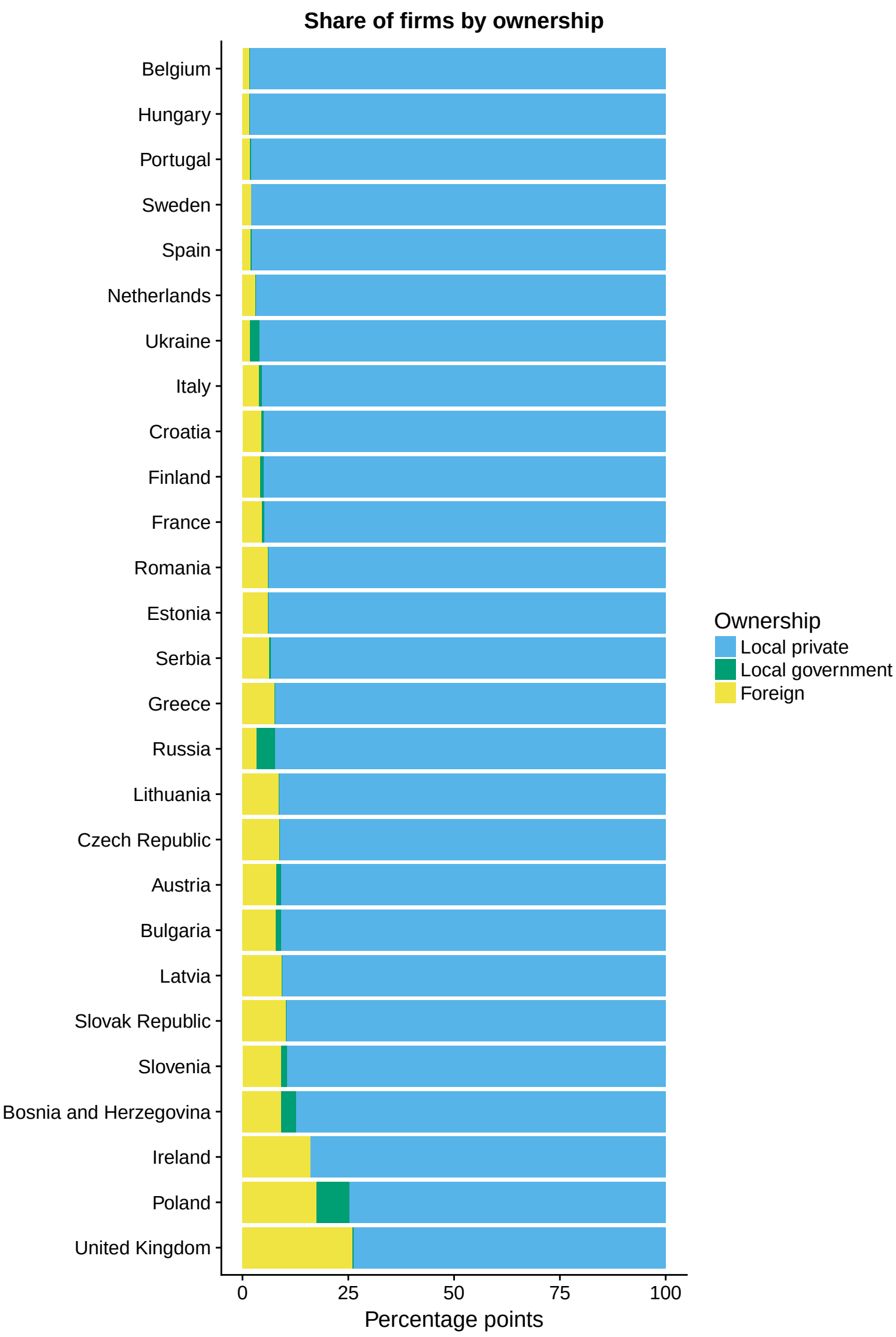

Share of employment and firm size
United Kingdom
Poland
Russia
Ireland
Bulgaria
Bosnia and Herzegovina
Slovenia
Greece
France
Lithuania
Finland
Ukraine
Hungary
Slovak Republic
Italy
Czech Republic
0
25
50
75
100
Percentage points
Firm size brackets
<10
10−49
50−249
>249

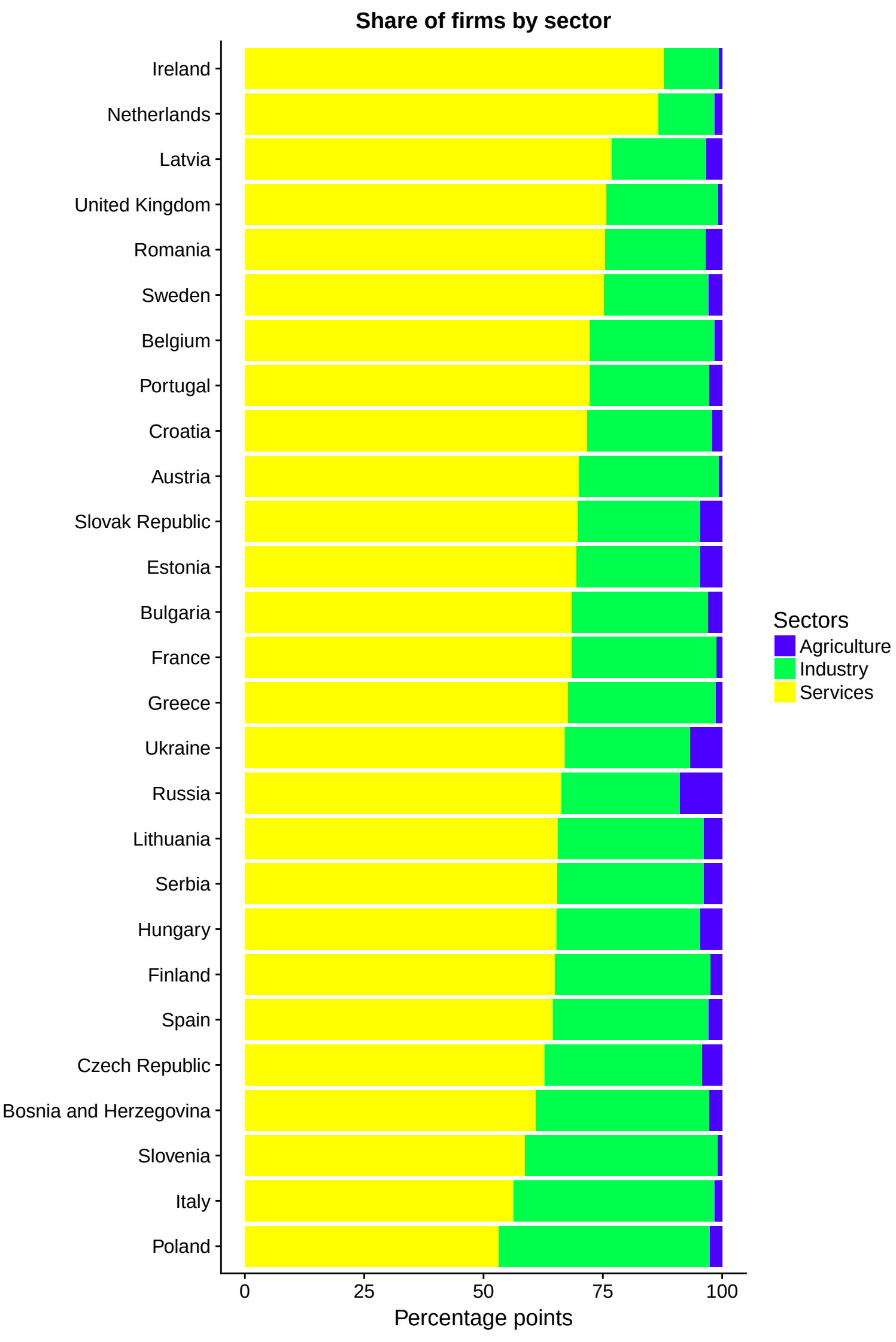

Share of employment in sectors with tradables
Slovenia
Greece
Serbia
Hungary
Bulgaria
Italy
Slovak Republic
Russia
Czech Republic
Portugal
Ukraine
Romania
Bosnia and Herzegovina
Croatia
Spain
Poland
Estonia
Finland
Latvia
France
Lithuania
Sweden
United Kingdom
Austria
Netherlands
Belgium
Ireland
0
25
50
75
100
Percentage points
Sector
non tradable
tradable

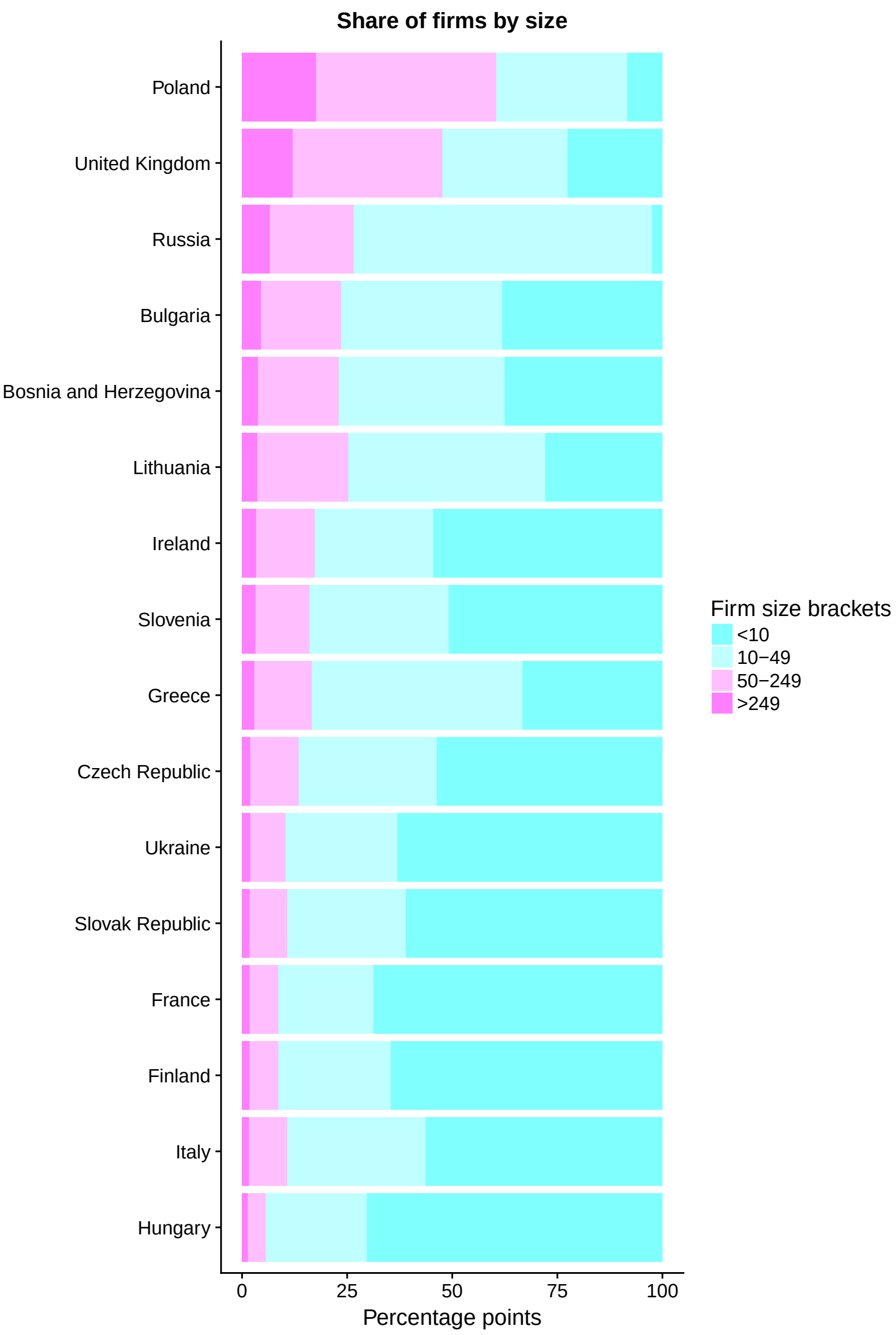

Share of firms by age
Greece
United Kingdom
Italy
Belgium
Austria
Finland
Sweden
Netherlands
France
Portugal
Poland
Spain
Ireland
Slovenia
Bosnia and Herzegovina
Bulgaria
Croatia
Serbia
Slovak Republic
Estonia
Russia
Czech Republic
Ukraine
Hungary
0
25
50
75
100
Percentage points
Firm age brackets
>2000
1990−2000
<1990

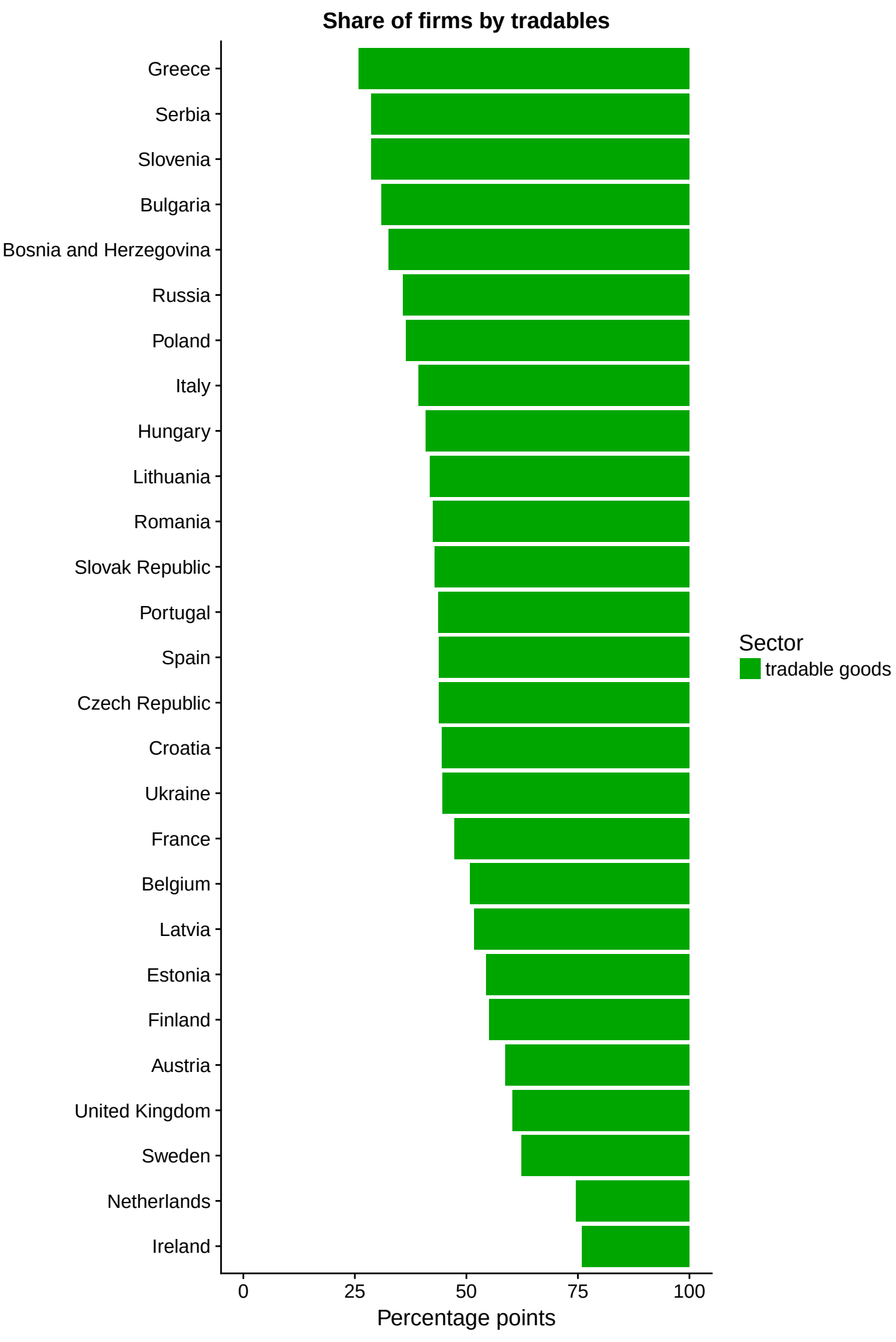

Share of firms by capital city
Latvia
Estonia
Bulgaria
Ireland
Serbia
Lithuania
Croatia
Hungary
Czech Republic
United Kingdom
Slovenia
Romania
Austria
Ukraine
Russia
Poland
Slovak Republic
Finland
Greece
Portugal
Sweden
Belgium
France
Spain
Bosnia and Herzegovina
Italy
Netherlands
0
25
50
75
100
Percentage points
Capital city
Not capital city
Capital city

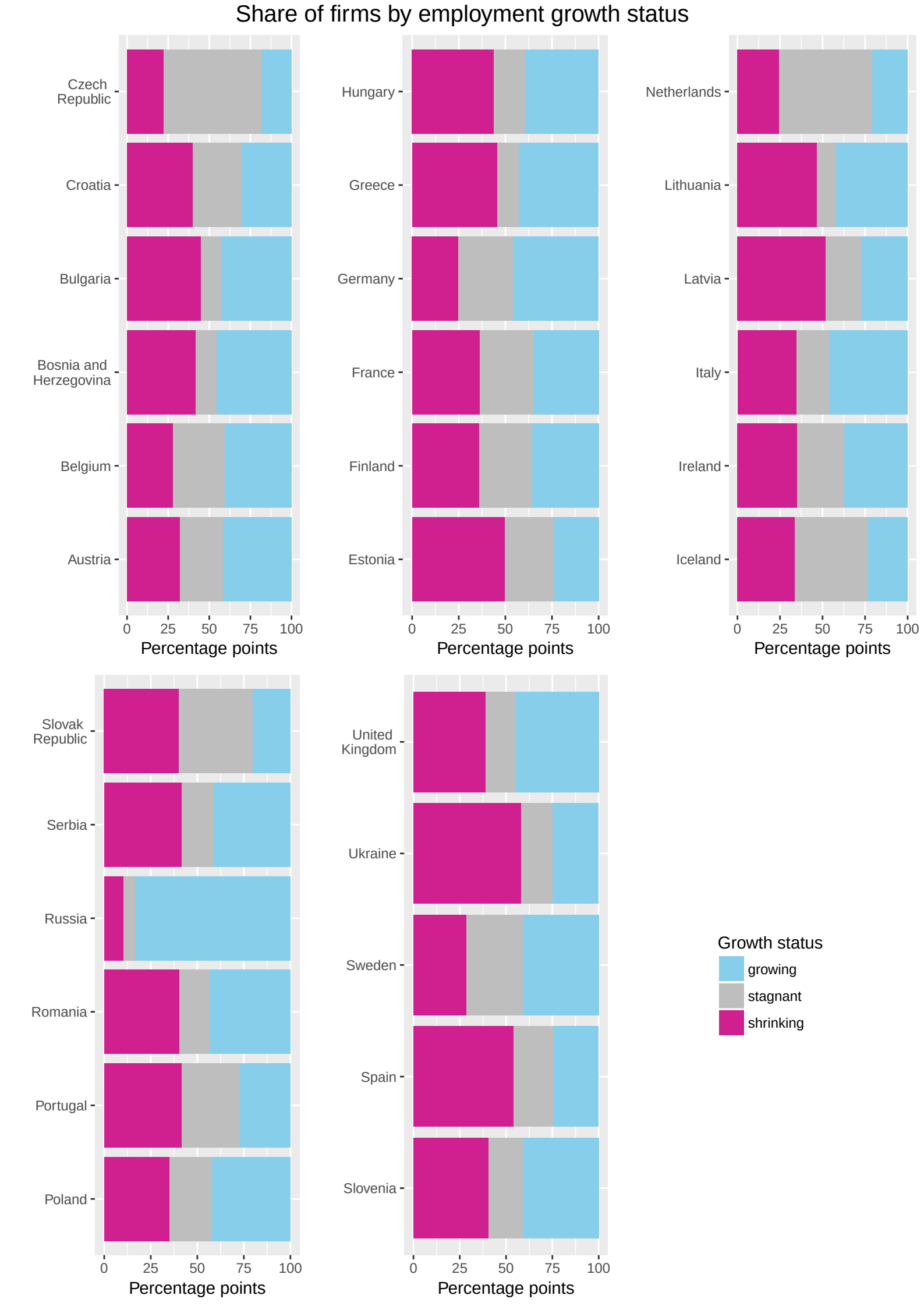

Share of firms by gender balance of management
Bosnia and Herzegovina
Ukraine
Romania
Russia
Serbia
Croatia
Belgium
Hungary
Netherlands
Latvia
Ireland
Bulgaria
Estonia
France
Lithuania
Portugal
Italy
Slovak Republic
Spain
Czech Republic
Sweden
Finland
Slovenia
Greece
Poland
United Kingdom
Austria
0
25
50
75
100
Percentage points
Female majority on board
No female majority
Female majority


Share of firms by ownership
Belgium
Hungary
Portugal
Sweden
Spain
Netherlands
Ukraine
Italy
Croatia
Finland
France
Romania
Estonia
Serbia
Greece
Russia
Lithuania
Czech Republic
Austria
Bulgaria
Latvia
Slovak Republic
Slovenia
Bosnia and Herzegovina
Ireland
Poland
United Kingdom
0
25
50
75
100
Percentage points
Ownership
Local private
Local government
Foreign


Share of firms by sector
Ireland
Netherlands
Latvia
United Kingdom
Romania
Sweden
Belgium
Portugal
Croatia
Austria
Slovak Republic
Estonia
Bulgaria
France
Greece
Ukraine
Russia
Lithuania
Serbia
Hungary
Finland
Spain
Czech Republic
Bosnia and Herzegovina
Slovenia
Italy
Poland
0
25
50
75
100
Percentage points
Sectors
Agriculture
Industry
Services


Share of firms by size
Poland
United Kingdom
Russia
Bulgaria
Bosnia and Herzegovina
Lithuania
Ireland
Slovenia
Greece
Czech Republic
Ukraine
Slovak Republic
France
Finland
Italy
Hungary
0
25
50
75
100
Percentage points
Firm size brackets
<10
10−49
50−249
>249


Share of firms by tradables
Greece
Serbia
Slovenia
Bulgaria
Bosnia and Herzegovina
Russia
Poland
Italy
Hungary
Lithuania
Romania
Slovak Republic
Portugal
Spain
Czech Republic
Croatia
Ukraine
France
Belgium
Latvia
Estonia
Finland
Austria
United Kingdom
Sweden
Netherlands
Ireland
0
25
50
75
100
Percentage points
Sector
tradable goods


Share of firms by employment growth status
Czech Republic
Croatia
Bulgaria
Bosnia and Herzegovina
Belgium
Austria
Hungary
Greece
Germany
France
Finland
Estonia
Netherlands
Lithuania
Latvia
Italy
Ireland
Iceland
Slovak Republic
Serbia
Russia
Romania
Portugal
Poland
United Kingdom
Ukraine
Sweden
Spain
Slovenia
0
25
50
75
100
Percentage points
Growth status
growing
stagnant
shrinking


Share of firms by employment growth status and capital intensity
High
Low
Austria
Belgium
Bosnia and Herzegovina
Bulgaria
Croatia
Czech Republic
Estonia
Finland
France
Germany
Greece
Hungary
Iceland
Ireland
Italy
Latvia
Lithuania
Netherlands
Poland
Portugal
Romania
Russia
Serbia
Slovak Republic
Slovenia
Spain
Sweden
Ukraine
United Kingdom
0
25
50
75
100
Percentage points
Growth status
growing
stagnant
shrinking