The business sector and the sustainable development goals – Denmark and neighbouring countries

STATISTICS DENMARK

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Foreword

As part of Statistics Denmark's work on the sustainable development goals (SDGs), an analysis was completed in 2020 of the development in the Danish business sector with respect to a number of SDGs. The results were published in *The Danish business sector and the sustainable development goals*.

We now follow up on the Danish analysis from 2020 with a perspective across eight countries, Denmark and seven neighbouring countries. The purpose is to show whether the business sector develops correspondingly in other countries with respect to this international agenda. The analysis includes economic, environmental and social indicators based on common statistics in the EU. Furthermore, it describes some of the challenges involved in making comparisons across countries.

Compared to the publication *The business sector and the sustainable development goals* from 2020*,* this publication deals with fewer indicators and, in some areas, also fewer branches of industry. The focal point is still UNCTAD's work, where the SDGs have been converted into 33 indicators on which enterprises should report individually. However, many of the indicators can be calculated at macro-level based on official statistics, and thus the results can also be used as a reference for individual enterprises.

The publication covers employment, value added, economy, R&D spending, green goods and services, emission of climate gases, gender composition and equal pay.

As a general rule, the development is shown from 2010 through to 2019. In several areas, data is also available for 2020, but it has been left out to prevent any short-term effects of COVID-19 on the conclusions. Based on the information about sources and methods, interested readers can calculate indicators for 2020 onwards.

The publication primarily shows the relative development in countries and industries for the specific indicators, since a comparison of actual figures across countries is difficult. A description of the differences between the countries is also included as essential background information to understanding the development in some of the indicators.

Statistics Denmark is responsible for Denmark's reporting on the SDGs, and with this publication, we hope to contribute to sustainability efforts in enterprises, industrial and trade organisations and relevant authorities. And to provide anyone with a general interest in business conditions and sustainability with new knowledge.

The business statistics section was at the head of the work on this publication, and Ole Olsen is responsible for analyses and dissemination. Ea Lahn Mittet prepared the tables and figures. Marianne Gross Stryhn has translated the original Danish version.

Statistics Denmark, May 2022

Birgitte Anker, Director General

Claus W. Andersen, Head of Division

Contents

Summary

The business sector's contribution towards fulfilment of the SDGs is important

The Sustainable Development Goals (SDGs) from 2015 constitute a common frame of understanding and an agenda to change society towards increased sustainability – in an economic, social and environmental/climate sense. The business sector plays a decisive role in this context, and thus it is relevant to look at developments in the business sector based on the SDGs and their related indicators. A previous publication showed the development in the business sector in Denmark, and the conclusion was that an overall positive trend could be measured. This publication presents results for Denmark and seven neighbouring countries to offer an idea of whether other countries have seen a similar development. The seven countries represent almost half of Denmark's external trade.

Global indicators for businesses and SDGs

The publication is mainly based on the work done by UNCTAD, which resulted in a number of indicators that major enterprises should use for SDG reporting. The level of interest is impressive, e.g. it is very much on the radar of investors. We were able to find many of the indicators directly or in approximate form in the existing statistics that are produced regularly by the statistical authorities in EU countries. The primary focus of this publication is to show the *trend*, but also to provide an underlying basis for assessing the comparability across countries that are very different in terms of business.

General conclusion: The business sector is moving in the right direction in all eight countries

Overall, the data indicates a positive trend for the business sector in all eight countries from a sustainability perspective, regardless of the fact that the countries have very different baselines in a number of areas. It is not possible to reliably point out countries that are especially successful or countries that are lagging behind. The overall positive development is not only attributable to the SDGs, since common policies and objectives, e.g. in an EU context, obviously also play a major role. Below is a summary of the main conclusions based on the indicators, their relation to the SDGs and a few points that call for special attention.

Economic indicators

More people in employment (target 8.5)

In all eight countries, many new workplaces have been created in the business sector since 2010, as employment overall has improved by 9 per cent. With 16 per cent, the United Kingdom saw the most pronounced progress, whereas Finland only saw an increase of 2 per cent. Meanwhile, there has been a shift between the sectors, as the biggest relative increase is seen in *information and communication* and *knowledge-based services*, whereas the data shows a clear employment downturn in the primary sector, i.e. *agriculture, forestry and fishing* and *mining and quarrying*.

Significant growth in value added (target 8.1)

Value creation measured by gross value added in constant prices grew more than employment in the business sector, for the countries overall, it grew by 20 per cent. Poland stands out with an increase of 43 per cent, whereas Finland with 10 per cent experienced the lowest level of growth. In terms of industries, the changes follow the development in employment with a relative increase in the service sector and a decline in the primary sector. The manufacturing industry's share of the value added has increased in four countries and decreased in the four other countries in the comparison.

R&D spending of the business sector increased in most countries (target 9.5)

In the eight countries as a whole, the R&D spending of the business sector, measured in relation to the sector's value added, increased from 2.0 per cent in 2010 to 2.5 per cent in 2019. Six of the eight countries saw an increase, but their base levels were very different. Denmark and Finland saw a decline. Focusing specifically on *manufacturing*, which accounts for half of the business sector's research spending, the picture among the countries is essentially the same.

More green goods and services (several SDGs)

Production of green goods and services, which represents part of the green transition, has increased, measured as the share of employees in the business sector working in this field. The total share increased by 6 per cent, but the level is still in the order of 2 per cent looking at the countries overall. The development covers five countries where the share has increased, whereas two countries, Sweden and the United Kingdom, saw a decline. Norway has not yet completed their statistics. Due to considerable differences in methods between the countries' accounts of green goods and services, the data must be interpreted with caution.

Emissions of climate gases

Only comparison of the development in emissions

UNCTAD has listed a number of relevant environmental indicators, but in this publication, we have chosen to only compare the countries' climate gas emissions. This is partly because climate gases are the most commonly used indicator of climate impact, partly because the common statistical basis with respect to energy consumption, water consumption and waste generation is not deemed to be sufficiently consolidated, and/or does not exist in a breakdown into business categories matching the one used in this publication.

Noticeable decline in emissions of greenhouse gases (target 9.4)

The emission of greenhouse gases (excl. from biomass burning) by the business sector has declined since 2010 by 16 per cent for the eight countries overall. Measuring emission in relation to value added, the decline is 30 per cent. It must be pointed out that these are so-called *scope 1* emissions, where the development in energy supply is fully included in the figures for the utilities industry and not allocated to the industries and households consuming the energy.

Biggest absolute decline in emissions in Finland

In actual emissions, Finland saw the biggest decline since 2010 of 30 per cent, followed by the United Kingdom with approximately 28 per cent, while Denmark, the Netherlands, Poland and Norway are below the average 16 per cent. Looking at the development in relation to value added, the United Kingdom has achieved the greatest reduction of 40 per cent. Finland, Sweden and Poland also saw a decline of more than 30 per cent. The potential to reduce emissions, however, very much depends on the business structure, especially on whether international carriage is substantial or not as share of business activities.

Relatively less emission from manufacturing

The development varies a great deal among the industries, but e.g. *manufacturing* shows a decline in actual emissions looking at the eight countries together. However, the data from Poland shows an increase, and four other countries, including Germany, saw a smaller decline than average, whereas Finland, the United Kingdom and Sweden saw the biggest decline. In relation to the development in value added, Denmark, Finland and Poland saw the biggest decline.

Gender equality and equal pay

Barely changed gender composition (target 8.5)

The SDGs urge for workplaces to be attractive to both men and women. For the industries as a whole, the share of women in employment is roughly the same as in 2010 in most countries, but it is worth noticing that the countries have different shares of women with differences of up to 5 percentage points. According to the data, Poland and Germany have the highest share of women in employment in the 14 industries with 37 per cent, whereas Norway has the lowest with 32 per cent.

More women in construction, fewer in financing and insurance

In all the countries, there is now a higher share of women in *construction* (although it is still low). Germany and the United Kingdom have seen the biggest rise in the share of women in this industry, and they also have the highest shares among the countries, with shares over 10 per cent. The trend is the opposite in *financing and insurance*, where most of the countries now have fewer women than before, possibly as a result of extensive digitisation, where services involving direct customer contact have partly disappeared.

Closer to closing the gender pay gap (target 8.5)

In all of the eight countries, except for Poland, the gender pay gap has been reduced since 2010 when looking at the business sector overall. The pay gap, which is influenced by differences in e.g. education, position and seniority was in the order of 15 per cent on average in 2018. The data for Germany and the United Kingdom shows that women are paid almost 20 per cent less, which suggests that in some countries, in any case, the gender pay gap in the business sector is still considerable.

1. Introduction

Businesses and sustainable development goals

The sustainable development goals from 2015 and the related indicators are drawn up for society in general, which means that most indicators are assessed for a nation as a whole. However, a few targets and indicators relate directly to the development in e.g. food production or industrial manufacturing, and there is a cross-sectoral goal for more enterprises to report on sustainability and corporate social responsibility in general.

The business sector plays a pivotal role in meeting the SDGs

In our efforts to attain the sustainable development goals by 2030, enterprises are the key actors in a number of areas. This goes for all countries, and it is not least true in terms of climate objectives and green transition objectives in general. Similarly, the private sector is of primary importance to the conditions for the majority of employees in all countries. Furthermore, growth and employment in the business sector is decisive for the development of the national economy. Statistics that can shed light on the development of the business sector in relation to SDGs is thus important to decision makers, nationally as well as internationally.

2020 perspective on the Danish business sector

In the publication *The Danish business sector and the sustainable development goals*, Statistics Denmark showed how national statistics could be used to show if the business sector contributes towards implementation of the SDGs. This agenda is also pursued internationally, and this publication follows up with a perspective across a small group of countries. The purpose is to provide anyone taking an interest with a basis of comparison, and to give an impression of the possibilities and limitations of international comparisons, here specifically among eight European countries.

1.1 Reporting of sustainability

Corporate social responsibility

For many years, corporate social responsibility has been the focus of attention. On an international scale, the *Global Compact*, introduced by the UN in 1999, constitutes a code of responsible corporate behaviour. *The UN Guiding Principles on Business and Human Rights* is a binding instrument, adopted by the UN Human Rights Council in 2011. In Denmark, requirements, partly anchored in EU guidelines, are embedded in the Financial Statements Act for large companies to prepare reports on corporate social responsibility, so-called CSR reports.

The SDGs have resulted in renewed focus

The adoption of the Sustainable Development Goals in 2015 has drawn new attention to enterprises and their impact on the sustainability of society. A range of initiatives aim to enhance the non-financial reporting, in an international context often referred to as corporate reporting on *Environmental and Social Governance* (ESG reporting). New legislation is on the way within the EU, legislation that will extend the reporting requirements for major companies, not least when it comes to comparable and data-based indicators in the non-financial areas.

UNCTAD has made a proposal for "Core Indicators" for company reporting

The UN Conference on Trade and Development, UNCTAD, which works with e.g. company accounting principles, has worked on translating the SDGs to measurable indicators for companies. This has resulted in 33 SDG-related indicators, which are described in detail in the report (2019): *Guidance on core indicators for entity reporting on contribution towards implementation of the Sustainable Development Goals*, including a proposal on how to calculate the indicators. The UNCTAD indicators are organised under four headlines: The economic area, the environmental area, the social area (including gender equality) and the institutional area.

Danish proposals for sustainability indicators

Drawing inspiration from the international initiatives, CFA Society Denmark, the Institute of Public Accountants in Denmark (FSR) and Nasdaq Copenhagen have prepared proposals for 15 indicators and their calculation in the overview (from 2020): *Key Environmental, Social and Governance figures in the annual report*. To a wide extent, the indicators are aligned with UNCTAD's list and are intended as a "starter kit" for improved sustainability reporting.

Statistical initiatives in the UN

The efforts on global goals and sustainability have also prompted international attention to the need for developing statistical standards in order to properly elucidate the business sector in relation to sustainable development goals. Within the framework of the UN Statistical Commission's work on business statistics, with the participation of Statistics Denmark and Eurostat among others, a proposal of 18 statistics-based indicators has been developed under the headline "Wellbeing and sustainability". In terms of content, the proposed indicators are in line with UNCTAD's list of indicators – taking the differences into account between business statistics at the national level and reporting in company accounting.

As a supplementary initiative, the UN set up a task force in the autumn of 2021 to create improved consistency between environmental statistics and business statistics, thus improving the possibilities of subjecting the environmental activities of the business sector to statistical analysis.

Initiatives also in other international organisations

Within the UN family, organisations such as the Food and Agriculture Organization (FAO) are also working on creating statistical coherence with the global sustainable development goals. The FAO has prepared a report *Guidance on core indicators for agrifood systems.* It includes proposals supplementing UNCTAD's list of indicators with a number of indicators that are especially relevant in the food area. The OECD also has focus on examining social and environmental exposures from the business sector. This is handled within the framework of the *Centre on Well-being, Inclusion, Sustainability and Equal Opportunity (WISE)*

The heightened interest in a true and fair presentation of SDGs and the sustainability of businesses is also clear among international auditing and accounting organisations. Currently, a consolidation is taking place of proposals for non-financial indicators – and more specifically how they should be calculated by the companies.

Limitations of expounding

The UNCTAD indicators – and the statistics partly covering the same issue – will essentially only cover what goes on in the actual companies, e.g. with respect to environmental impact and staff-related matters. However, companies also impact sustainability through their imports and their choice of suppliers, and according to the Global Compact principles they must also take responsibility for these external conditions. However, the external sustainability impact upstream along the value chain is difficult to measure, especially across various types of companies and borders.

Statistics and business reporting

To a wide extent, the statistics included in the assessment of the sustainability of the business sector are based on data reported by enterprises to statistical agencies or to administrative registers. Other statistics rely on data on the procurement of goods and services by enterprises, in some cases supplemented with calculated breakdowns by industry. Thus, there is a difference between what individual enterprises include in their assessments and what can be compiled statistically for groups of enterprises. Accordingly, statistics cannot replace extended business reporting, but can be used as a basis for comparison. In this publication, only official statistics were used as published in the Eurostat Database.

1.2 The eight countries

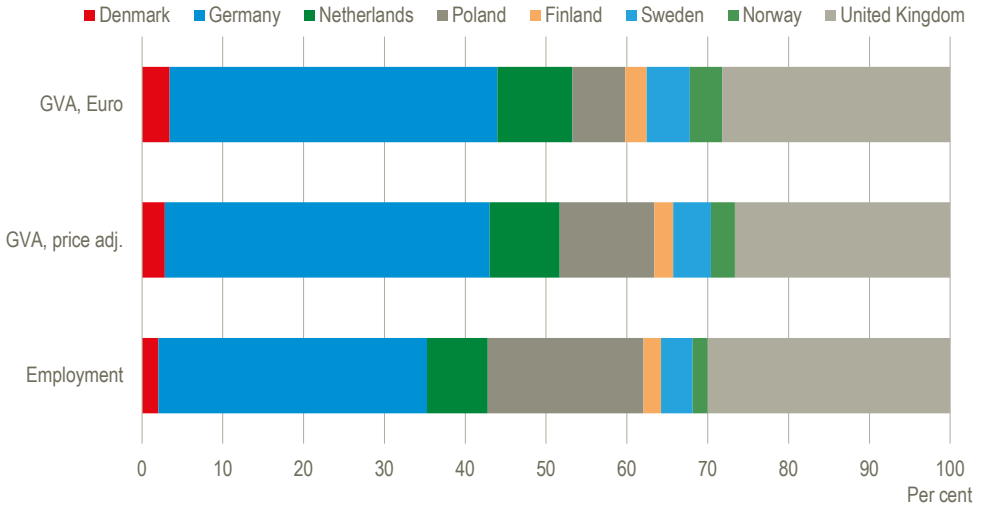
Eight countries in the comparison

Eight countries have been selected for comparison of results: Denmark, Germany, the Netherlands, Poland, Sweden, Finland, Norway and the United Kingdom. These countries are all relatively close to Denmark and are closely interlinked in terms of their economy. The eight countries are all part of the European Statistical System – even though only six of these countries are EU member states. Note that in tables and figures, countries are listed in the same order as in Eurostat tables. The source references are supplemented with the technical table names.

Vast differences between countries

In spite of the geographic closeness, the eight countries are very different. They span from Germany with 83m inhabitants to Denmark, Finland and Norway with 5-6m inhabitants. They can all be characterised as industrialised countries, although Poland has a different economic history and is less affluent than the others. Norway differs from the other countries on account of its vast oil production, whereas other countries have limited activity in extraction of raw materials.

Figure 1.1 **Relative distribution of value added and employment in the business sector by country. 2019**



Note: The applied gross value added (GVA) is in EUR, in current prices. The price adjusted account (EUR, PPS) is according to purchasing power parities (PPP). The account comprises the 14 types of industries included in the analysis.
Source: Eurostat, national accounts, (nama_10_a64) and (nama_10_a64_e).

The countries' shares of the economy and employment

Germany carries the most weight in value added as well as employment, as Germany accounts for 41 per cent of value added and 32 per cent of employment in the business sector in the eight countries combined. The weight of Poland varies a lot, depending on the variable used for comparison. Nominally, Poland accounts for barely 7 per cent of value added in the eight countries, but for 19 per cent of employment. If the value added is adjusted for differences in purchasing power between national currencies (i.e. price differences across borders), Poland's share of value added increases to 12 per cent, whereas the share of the other countries is reduced, most notable for Norway and Denmark, which have the biggest price adjustments downwards.

Challenges of comparison

It should be noticed that there are several circumstances that affect the comparability of employment and value added across borders and time. Employment is geographically defined, whereas value added also includes activity in other countries. This probably means that local activity is underestimated in the figures on value added for Poland, whereas it is overestimated in the other countries. E.g. Danish companies are likely to have more production in Poland than the other way round. It is also worth mention that value added in Norway in 2019 appears lower than if the basis had been value added in constant 2010 prices. The exchange rate of NOK to the EUR is approximately 20 per cent lower than it was 10 years ago, which has a significant impact on the calculations when using current prices. The changing prices of crude oil has a similar impact on the figures

Poland carries more economic weight than in 2010, Norway less.

Comparing the distributions in 2019 with those from 2010, the business sector in Poland has seen more progress in value added than the other countries. On the other hand, the Norwegian share measured in EUR has clearly dropped, which can partly be ascribed to a lower exchange rate. The business sector employment paints a different picture. Finland and Poland have seen the lowest growth rate in employment, whereas most of the other countries have seen more growth, roughly coinciding with the demographic development. Overall, the economic disparity between the eight countries has been slightly reduced over the last decade.

1.3 Industrial groupings and indicators

Delimitation of industrial groupings

The presentation uses the delimitation of industries that breaks down the economic activity of society into nineteen industries, as per the Danish Industrial Classifications 2007 (DB07 – identical with the European NACE Rev. 2). From these nineteen industrial groupings, we have selected fourteen, consisting mainly of private enterprises or other enterprises operating on market terms. Most of the applied statistics and statistics bank/database tables cover the activity of the industrial grouping in full, whereas a few of them only cover enterprises over a certain minimum size.

Names of industrial groupings

In figures and text, we have used the names applied in the Eurostat database tables, but for editorial reasons *Electricity, gas, steam and air conditioning supply* are written as *Energy supply*, *Water supply, sewerage and waste management* as *Water, sewerage and waste*, *Accommodation and food service activities* as *Accommodation and food serv.* and the industry group *Travel agent, cleaning, and other operational services* has been abbreviated to *Business services*.

Start in 2010

Overall, we have decided to look into the development from 2010 up to and including 2019. In some instances, data for 2020 is available, but to eliminate any disruptive effect from the impact of COVID-19 on e.g. earnings and employment, we have chosen to disregard 2020. A few results are not available from 2010, which is why these start later. For most results, the most recent year is 2019. However, for structure of earnings it is 2018. The presented results primarily concern the relative development and trend, since it does not always make sense to compare absolute figures across the countries. Figures and tables do not include results published by Eurostat later than 1 January 2022 for editorial reasons.

Selection of indicators

The indicators and sets of statistics used in this publication were selected based on existing information and an assessment of materiality. The aim has also been to cover as well economic, as environmental and social indicators. Compared to the indicators included in the publication *The Danish business sector and the sustainable development goals*, fewer indicators were selected for this publication, mostly due to the nature of the statistical basis. Some details are not available with the desired breakdown from Eurostat, and in other cases, we have rejected them based on our assessment of the comparability of results for the countries.

The following is a presentation of the indicators included in the four chapters and the relation with the UNCTAD list. There are also references to the indicators included in the publication *The Danish business sector and the sustainable development goals*, as the data basis in an EU context is sometimes slightly different. The more detailed relation of the selected indicators with the SDGs is dealt with in the individual chapters.

Employment and the economy

This chapter includes selected economic indicators in the form of employment and gross value added in the individual industries. Shedding light on employment and value added is important background information, since several indicators are calculated in relation to these. It must be noted that 2010 – the base year – was still characterised by the financial crisis, which meant that value added and employment were at a relatively modest level.

The UNCTAD list also includes turnover and net value added as economic indicators. Employment is not mentioned specifically, as it is included in the general company information.

Transition to more sustainable production

This chapter is about the research spending of enterprises and their production of green goods and services, which are environmental SDG indicators. On the whole, research spending corresponds to the definition proposed in the UNCTAD list, while the production of green goods and services deviates somewhat from the "green investment" indicator of the UNCTAD list.

From the UNCTAD list, we have decided not to show the business sector's total payment of taxes and duties, nor indicators for local procurement, since these areas are not covered by adequate official statistics.

Greenhouse gases

We assess the business sector's emission of CO2 and other greenhouse gases at industry level, both in totals and in relation to value added. An account including consumption of electricity and district heating for each industry (Scope 2) is not available in the EU statistics, which is why the detailed results for Denmark in this publication differ from those in the publication *The Danish business sector and the sustainable development goals*. The differences are described in more detail in chapter 4.

In the environmental area, we deviate from the UNCTAD list by not showing the enterprises' energy consumption, because the countries are not completely consistent in their reporting to the EU statistics in this area, and because changes in energy consumption are reflected in the CO2 emissions. Further, consumption of sustainable energy is not shown, since this is more a derived consequence of transitions in the energy supply sector than the result of a decision made by the individual enterprise. Compared to the indicators used in *The Danish business sector and the sustainable development goals*, we have chosen not to show results for water and for waste. These elements in the environmental-economic national accounts (also known as the green national accounts) are developed to different extents in the eight countries.

Gender equality and equal pay

Chapter 5 gives examples of indicators for the social dimension of the SDGs. The composition of business sector employees, broken down by sex and industry, clarifies whether the trend of developments in each of the eight countries is in the direction of a more equal gender composition or not. However, a subdivision into managers and employees without managerial responsibility, as applied in *The Danish business sector and the sustainable development goals*, does not exist in the EU statistics. With respect to equal pay, the overall development in hourly wages is shown for the business sector industries as a whole, whereas industry-specific calculations of the *pay gap* between men and women does seem to be too volatile and robust enough as a basis of comparison between the countries.

As for the mentioned description of the conditions in Denmark, the EU statistics do not include statistics showing the gender composition of executive boards and management boards. Furthermore, we have chosen not to include occupational accidents, since the basis of the statistics varies from one country to the next. Work days lost due to sickness absence are also not included, as the EU statistics do not include an industry breakdown corresponding to one applied here.

As for the social area, UNCTAD proposes further to measure continuation training and education efforts of enterprises, a subject on which the most recent information, however, is for 2015. In addition, it also proposes that enterprises assess how many of their employees are covered by collective agreements. However, there are no official statistics for this. Under the institutional area, UNCTAD proposes that companies report e.g. the number of board meetings as well as data showing how they are working to eliminate corruption. Nor in these areas are matching statistics available.

Further analysis and clarification

With eight indicators, eight countries and fourteen industries through a decade, it is possible to emphasise just a selection of results. However, the sources are clearly described, thus facilitating calculation of more results, also for the time ahead. Some countries are likely to have a more extensive data basis allowing further breakdowns or calculations on indicators not included in this present analysis. The primary focus here is to present the development for selected indicators in the eight countries and to make comparisons between the countries, to the extent possible.

2. Employment and the economy

Introduction

This chapter gives an overview of the structure and development in the economy and employment in the eight countries. The chapter is meant as a backdrop for later chapters, as it shows the structural differences in the business environment of the countries. Furthermore, overall shifts from 2010 to 2019 are described. However, employment and the economy are also in themselves relevant for the SDGs, as productive jobs and (sustainable) growth must ensure a robust economy as a basis for sustainability in a broad sense.

Employment and the economy (gross value added) are examined based on the national accounts statistics, which are available in Eurostat's database.

2.1 Employment

High rate of employment included in the SDGs

More workplaces and equal access to all types of jobs, together with economic growth, are the core issues of SDG 8. The employment goal is also included in target 8.5 *Achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value* specifying that there must be equal access for all groups of people. A message to promote policies that support job creation is specifically mentioned in target 8.3. Other targets mention e.g. progress in productivity, employee rights and sustainability. These aspects are also included in the subsequent chapters.

Employment statistics

The employment rate can be assessed in a number of ways. We have decided to use the hour statistics contained in the national accounts statistics[1]. This method ensures that comparisons are not affected by differences in standard working hours in the individual countries, just as both self-employed persons and employees are included. The statistics cover total business activity, and thus also the informal activity, although this is subject to some level of uncertainty. *Agriculture, forestry and fishing* and *Accommodation and food serv.* are examples of industries where you may find a good deal of informal production.

Increasing employment in all countries and in most industries

In all the eight countries, employment was higher in 2019 than in 2010 for the 14 industries overall. The absolute figures show a total increase for the countries of 8.8 per cent since 2010, lowest in Finland (2.0 per cent) and Poland (2.9 per cent) and highest in United Kingdom (16.5 per cent). The changes are partly coinciding with the development in population data. Of the 14 industries, the biggest increase was seen in the industry *information and communication* with 25.3 per cent and for *knowledge-based services* (24.5 per cent). Declining employment was seen in *Agriculture, forestry and fishing* (-16.6 per cent), *raw material extraction* (-9.0 per cent) and *financial and insurance* (-4.1 per cent). In the remaining 11 industries, employment was increasing.

[1] In connection with the preparation of the publication: *The Danish business sector and the sustainable development goals*, the enterprise statistics were used as a basis for employment data.

Different distribution on industries

The business structure of the countries varies a great deal, as it appears from the table. With 27.1 per cent in Poland and 25.6 per cent in Germany, these two countries clearly have the highest relative share of employees in *manufacturing* measured as a share of total employment in the 14 industries. On the other hand, the Netherlands and the United Kingdom are characterised by a high level of activity in *knowledge-based services* and *business services*. Norway with 3.8 per cent and Poland with 1.7 per cent distinguish themselves with a relatively high level of employment in *mining and quarrying*, while the United Kingdom has a relatively high level of activity in *information and communication*(6.6 per cent) and in *financial and insurance* (4.8 per cent). Compared to the other countries, Denmark has the relatively highest level of employment in *wholesale and retail trade* (23.3 per cent), while Norway has the relatively highest share employed in *transportation* (10.0 per cent). *Agriculture, forestry and fishing* has the biggest shares in Poland (11.9 per cent) and in Finland (6.4 per cent).

Table 2.1 **Relative distribution of employment by country and industry, 2019**

	Denmark	Germany	Nether-lands	Poland	Finland	Sweden	Norway	United Kingdom
	per cent							
Agriculture, forestry and fishing	3.5	2.3	4.0	11.9	6.4	4.2	4.3	2.3
Mining and quarrying	0.3	0.2	0.1	1.7	0.4	0.3	3.8	0.3
Manufacturing	16.8	25.6	13.2	27.1	18.5	18.4	13.7	12.0
Energy supply	0.6	0.9	0.5	1.3	0.7	1.0	1.1	0.7
Water, sewerage and waste	0.6	1.0	0.6	1.5	0.8	1.0	1.1	1.0
Construction	11.2	9.2	9.4	10.5	14.5	12.4	15.0	11.3
Wholesale and retail trade	23.3	18.3	20.6	18.2	16.2	19.8	18.3	19.0
Transportation	8.0	7.7	6.9	8.6	8.8	7.6	10.0	7.8
Accommodation and food serv.	5.3	5.4	5.8	3.2	5.6	5.9	4.7	8.3
Information and communication	6.0	4.8	5.4	3.4	6.3	6.3	6.5	6.6
Financial and insurance	4.4	3.7	3.3	3.2	2.5	2.6	3.1	4.8
Real estate activities	2.5	1.4	1.1	1.2	1.5	3.0	1.7	2.2
Knowledge-based services	9.9	10.0	12.6	4.9	8.9	9.4	9.2	12.4
Business services	7.6	9.5	16.3	3.4	8.9	8.2	7.7	11.4

Note: The countries each add up to 100 per cent.
Source: Eurostat, national accounts (nama_10_a64_e)

Lowest share in public utilities in the Netherlands

Activities of electricity and water supply as well as waste management do not account for a great deal in terms of employment in any of the countries – ranging from 1 to 3 per cent of employment in the Business sector). There is a tendency that these activities require the biggest effort in countries with a low population density and thus longer distances, whereas the densely populated Netherlands seems to handle this the most efficiently in terms of labour input.

Table 2.2 **Distribution of employment, change by country and industry. 2019 compared to 2010**

	Denmark	Germany	Nether-lands	Poland	Finland	Sweden	Norway	United Kingdom
	percentage points							
Agriculture, forestry and fishing	-0.9	-0.6	-0.3	-3.8	-1.6	-0.2	-0.5	-0.6
Mining and quarrying	0.0	-0.1	0.0	-0.2	0.0	0.0	-0.3	-0.1
Manufacturing	-0.9	0.4	-1.3	2.7	-2.1	-3.2	-2.0	-1.6
Energy supply	-0.1	0.0	0.0	-0.2	-0.1	-0.1	0.0	0.0
Water, sewerage and waste	-0.1	0.1	0.0	0.2	0.1	0.2	0.1	0.2
Construction	0.5	-0.3	-0.7	-0.6	0.8	1.6	2.6	-0.1
Wholesale and retail trade	-0.4	-1.4	-1.1	-1.4	-0.7	-0.1	-1.5	-2.0
Transportation	-0.7	0.7	-0.2	0.9	-1.1	-1.2	-0.9	0.4
Accommodation and food serv.	1.1	-0.1	0.8	0.3	0.8	1.2	0.7	0.9
Information and communication	-0.2	0.6	0.5	1.0	0.8	0.4	0.4	0.6
Financial and insurance	-0.6	-0.8	-1.2	0.3	-0.2	-0.4	-0.5	-0.7
Real estate activities	-0.2	-0.1	-0.2	-0.1	0.0	0.4	0.1	0.1
Knowledge-based services	0.8	1.0	0.6	1.0	1.0	0.3	0.5	1.7
Business services	1.6	0.7	3.1	0.1	2.3	1.2	1.2	1.2

Note: The countries each add up to 0 per cent.
Source: Eurostat, national accounts (nama_10_a64_e)

Shift towards the service sector

There are no very big changes in the business structure of the eight countries from 2010 to 2019. However, changes have taken place in the relative employment in the countries for the 14 industries. Overall, there is a tendency towards increasing employment in the service sector with *business services*, *knowledge-based services* and *Accommodation and food serv.*, while *agriculture, forestry and fishing* as well as *manufacturing* is declining. *Wholesale and retail trade* varies from the pattern for the service sector with a decline in employment. The same applies to *financial and insurance*, where there is a relative decline in all countries, probably as a result of extensive digitisation.

As the only one, Poland increased manufacturing employment

At country level, Poland distinguishes itself with clearly higher relative manufacturing employment since 2010 and, at the same time, declining employment in *agriculture, forestry and fishing*. The four Nordic countries all have relatively higher employment in *construction* in 2019 than in 2010, whereas the other four countries have lower employment. Except from Germany, all the countries have increasing employment in *hotels and restaurants*. Denmark is the only country with a decline in employment in *information and communication*. Shifts from e.g. manufacturing to business services may be partly caused by enterprises dropping internal service functions and replacing it with external business services.

Increasing employment in a dynamic business structure

With increasing employment in all of the eight countries, and with clear changes in the composition between the industries, the development seems positive in relation to SDG targets 8.3 and 8.5 on job creation and employment. A transition has clearly taken place to increased employment in some industries and less employment in others. The figures indicate that many new workplaces were created.

2.2 Value added

Sustainable growth is part of the SDGs

Economic growth (especially in developing countries) is an SDG target, and the growth must be sustainable. Target 8.1 states this more accurately, *Create sustainable economic growth,* using annual gross domestic product growth per capita as an indicator. UNCTAD's list of indicators for businesses includes gross as well as net value added, one of the reasons being that environmental impact must be seen in relation to their economic value added.

Statistics of value added

The national accounts statistics in Eurostat include the final compilation of the companies' value added in the individual industries and are based on the same principles in the individual countries. The results are furthermore available in units that facilitate comparisons between the countries, e.g. in constant prices. The following provides a perspective based on *gross value added*, which is sales exclusive of intermediate consumption of goods and services. In short, it is the value that can be used for depreciations and investments as well as remuneration of employees and owners. Throughout the publication, we use *value added* in the sense of gross value added.

Value added in the business sector

The value added in the 14 industries overall has increased by 20.0 per cent since 2010 for the eight countries measured in constant 2010 prices, i.e. adjusted for increasing prices on goods and services, so that the figures reflect actual development. The highest increase in value added was in the industry *information and communication* with 48.2 per cent and second highest in *business services* with 40.0 per cent. Only *mining and quarrying* saw a decline in value added amounting to 21.7 per cent. The development is overall in line with the development in employment, as described above.

Some industries are labour-intensive, others capital-intensive

The distribution of value added on the 14 industries deviates to some degree from that of employment. This is mainly because some industries are labour-intensive, i.e. the value creation happens primarily by means of labour (the majority of service industries), and other industries are capital-intensive, i.e. the value creation happens primarily by means of capital (e.g. public utilities and manufacturing, but also real estate activities, where a lot of capital is used for rental housing). Value added reflects the contribution of enterprises to total GDP in the eight countries. In the following, value added is calculated in constant 2010 prices, which is why e.g. changes in exchange rates and inflation since 2010 basically do not affect the comparability between the countries.

Table 2.3 **Relative distribution of value added by country and industry, 2019**

	Denmark	Germany	Nether-lands	Poland	Finland	Sweden	Norway	United Kingdom
	per cent							
Agriculture, forestry and fishing	1.7	0.9	2.4	2.3	4.1	2.2	2.1	0.8
Mining and quarrying	1.2	0.2	1.4	1.9	0.7	0.8	23.6	1.5
Manufacturing	20.9	28.9	15.6	22.9	22.9	18.5	9.7	12.2
Energy supply	1.9	2.7	1.8	3.1	3.1	3.2	3.6	1.6
Water, sewerage and waste	0.9	1.7	1.0	1.4	1.1	0.7	0.8	1.9
Construction	7.0	5.0	7.3	9.4	7.7	7.4	8.0	7.4
Wholesale and retail trade	17.3	13.2	18.2	21.0	12.3	15.2	11.7	15.3
Transportation	8.1	5.4	5.7	7.3	6.5	6.8	6.8	4.9
Accommodation and food serv.	1.8	1.8	2.2	1.4	2.0	1.9	1.9	3.2
Information and communication	8.1	7.4	7.7	6.6	8.6	11.8	6.4	9.1
Financial and insurance	6.5	5.1	8.9	6.5	3.4	6.0	6.3	8.5
Real estate activities	12.6	13.4	8.8	6.2	15.8	11.0	9.6	15.1
Knowledge-based services	8.2	7.8	10.5	6.8	6.8	10.1	5.9	11.4
Business services	3.7	6.4	8.4	3.2	5.0	4.3	3.7	7.1

Note: Value added stated in constant 2010 prices. For the United Kingdom, data for 2019 was not yet available, which is why 2018 was used in the calculation.

Source: Eurostat, national accounts (nama_10_a64)

Oil production of Norway very visible

In 2019, almost a quarter of total value added in Norway in the 14 industry groups was created in the industry *mining and quarrying*, which is predominantly due to the oil production in the North Sea. In the seven other countries, mining and quarrying accounted for maximum 2 per cent in 2019. For Norway, the great contribution from oil production means that the other industries' relative share of value added is lower, which must be taken into account when making comparisons with the other countries.

In general, manufacturing accounts for the most

With the exception of Norway, value added from *manufacturing* generally accounts for much of total value creation in the 14 industries. Germany has the highest share of value added from manufacturing (28.9 per cent), but also Poland (22.9 per cent), Finland (22.9 per cent) and Denmark (20.9 per cent) have significant manufacturing activity. *Wholesale and retail trade* as well as *real estate activities* also account for a significant share of value added in all of the eight countries. For the latter industry, the housing structure, specifically the share of rental accommodation, plays a major role for the size of the figures.

Wholesale and retail trade biggest in Poland, knowledge-based services biggest in the United Kingdom

Wholesale and retail trade accounts for the relatively biggest share of value added in Poland (21.0 per cent), followed by the Netherlands with 18.2 per cent, whereas *knowledge-based services* account for the biggest share in the United Kingdom (11.4 per cent), followed by the Netherlands (10.4 per cent) and Sweden (10.1 per cent). Germany has the relatively lowest share from *construction* with 5.0 per cent, while Poland has the highest with 9.4 per cent. Finland is at the top within *real estate activities* with 15.8 per cent, and the United Kingdom has a share of 15.1 per cent.

More service activity and less primary production since 2010

As shown in table 2.4, *mining and quarrying* contributed far less to value added in 2019 than in 2010, most notably in Norway with a relative decline of 5.4 percentage points, which can be attributed to reduced production of oil and gas. In Denmark, the share of *mining and quarrying* has also dropped considerably with 3.1 percentage points to just 1.2 per cent now, and the data for the Netherlands shows a corresponding development. There is also a general decline in *agriculture, forestry and fishing*, whereas *information and communication* as well as *business services* on the other hand have become increasingly significant in all of the eight countries.

Table 2.4 **Relative distribution of value added by country and industry, 2010 to 2019**

	Denmark	Germany	Nether-lands	Poland	Finland	Sweden	Norway	United Kingdom
	percentage points							
Agriculture, forestry and fishing	-0.2	-0.2	-0.2	-1.6	0.4	-0.3	-0.1	0.0
Mining and quarrying	-3.1	-0.1	-2.6	-1.1	0.0	-0.3	-5.4	-0.9
Manufacturing	3.4	0.8	0.3	1.7	-2.7	-3.3	-0.7	-1.5
Energy supply	-0.7	-0.3	0.0	-0.9	-0.3	-1.0	0.3	-0.5
Water, sewerage and waste	-0.2	0.4	0.1	-0.1	-0.1	-0.1	0.0	0.0
Construction	0.9	-0.5	0.4	-0.8	-0.9	0.0	1.1	0.0
Wholesale and retail trade	0.3	0.6	1.7	-2.5	-0.1	0.9	1.6	0.9
Transportation	0.0	-0.5	-0.2	0.7	-0.2	-0.4	-0.4	-0.4
Accommodation and food serv.	0.0	0.0	0.2	0.1	-0.2	0.1	0.2	0.0
Information and communication	1.6	1.9	1.3	1.9	2.0	2.2	1.1	1.0
Financial and insurance	-2.0	-1.3	-2.7	1.5	-0.4	0.7	0.9	-2.0
Real estate activities	-1.1	-1.2	0.7	-0.3	1.0	0.1	0.7	-0.4
Knowledge-based services	0.7	-0.1	-0.2	0.5	0.6	1.1	0.3	2.0
Business services	0.3	0.5	1.1	1.0	0.8	0.2	0.5	1.8

Note: Value added stated in constant 2010 prices. For the United Kingdom, data for 2019 was not yet available, which is why 2018 was used in the calculation.

Source: Eurostat, national accounts (nama_10_a64)

Difference in the development of manufacturing

In some industries, the trend since 2010 has varied from one country to the next. Most notably in *manufacturing*, as four countries (Denmark, Germany the Netherlands and Poland) show relative progress in value added, whereas the other four (Finland, Sweden, Norway and the United Kingdom) show relative decline. In *construction*, there is a relative increase in three countries, Norway, Denmark and the Netherlands, whereas Finland, Poland and Germany have seen a decline.

Conclusion: Increase in value added

All eight countries have seen progress in value added (in constant prices), and there has been a significant shift in the distribution on industries for value added. This means that there been a transition in production from 2010 to 2019. The development thus seems to contribute to fulfilment of SDG 8.1 dealing with economic growth. Whether this growth has been sustainable, as set out in the SDG, will be partly dealt with in a subsequent section.

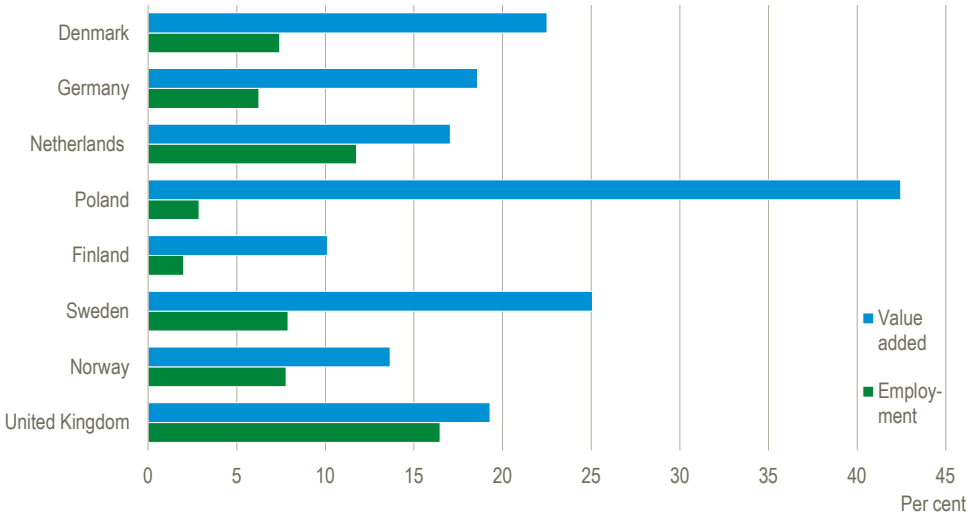
2.3 Overall economic development

The business sector measured by both employment and value added

It clearly appears that both employment and value added have increased since 2010. Comparing the two indicators allows us to find out if the changes are due to increased productivity, one of the objectives mentioned in e.g. SDG 8.2: *Innovation and technological upgrading for economic productivity*.

Figure 2.1

Development in total employment and value added by country. 2019 compared to 2010



Note: For the United Kingdom, data for 2019 was not yet available, which is why 2018 was used in the calculation.
Source: Eurostat, national accounts, value added in 2010 prices (nama_10_a64) and employment in hours (nama_10_a64_e).

Conclusion: Increase in both employment and value added

When value added in constant prices is compared with employment, the most notable result is that value added in Poland for the 14 industries lumped together has grown by 42.5 per cent, while employment has only grown by 2.9 per cent. This suggests a considerable improvement in productivity, which is what SDG 8.2 is about. In the other countries, the difference in development between value added and employment is clearly smaller. The smallest difference is seen in the in the United Kingdom with an increase in value added of 19.3 per cent and a growth in employment of 16.5 per cent. For the United Kingdom, the latest available data in Eurostat, however, is from 2018 and not from 2019 as for the other countries.

3. Transition to more sustainable production

The companies' transition to a more sustainable production is a prerequisite for achieving many of the SDGs. The companies can contribute e.g. directly through research and innovation and develop more sustainable products.

3.1 Research

Research and the sustainable development goals

Sustainable development goal 9 on *Industrialisation, Innovation and Infrastructure* features a number of indicators to support the transition to a more sustainable production. Target 9.5, *Enhance scientific research and upgrade the technological capabilities of industrial sectors* is specifically about upgrading the technological capacity of the manufacturing industry, but also about supporting research in general. Indicator 9.5.1 calculates the countries' research spending as a share of GDP. Research spending is also incorporated in the indicators that UNCTAD recommends companies include in their sustainability reporting.

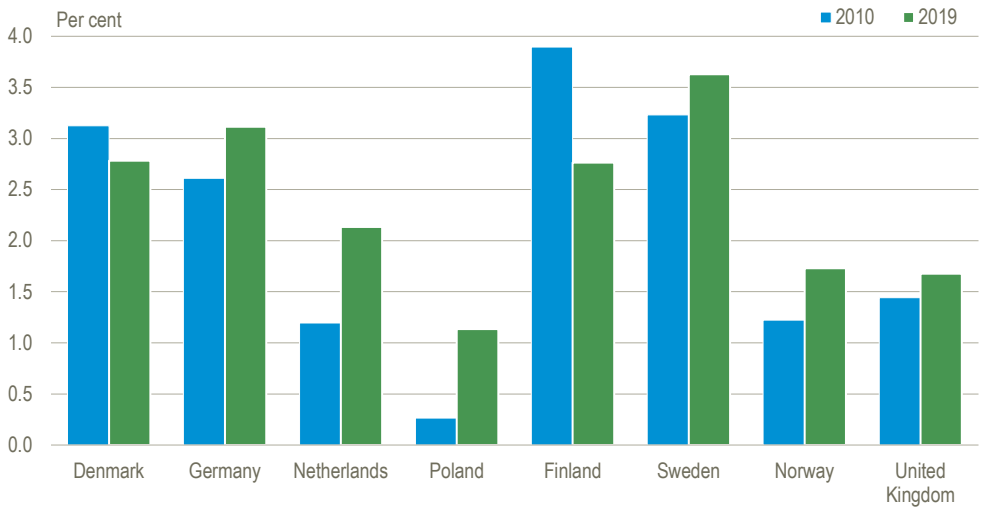
Research and development statistics

The Eurostat database holds statistics for research and development activities in the private as well as the public sector, calculated in the form of spending and human resource input. The statistics for the business sector's research throw light on the extent of research and development internally in the enterprises and their purchase of research from other enterprises. Spending is broken down e.g. by industries, though not for all countries every year. It should be mentioned that in the national accounts, research spending is included under investments.

R&D spending of EUR 148bn

In 2019, the private sector in the eight countries spent EUR 148bn on research and development. Measured in proportion to value added in the business sector, R&D accounted for 2.5 per cent. However, there are major differences between the levels of R&D spending in the business sector of each country. The share varied from 1.1 per cent in Poland to 3.1 per cent in Germany and 3.6 per cent in Sweden. The differences between the countries may be influenced by the fact that companies with activities in several countries concentrate their research activities in one country where they will then be included in the statistics even though research results are utilised in more countries.

Figure 3.1 **The business sector's R&D spending as a share of value added by country**



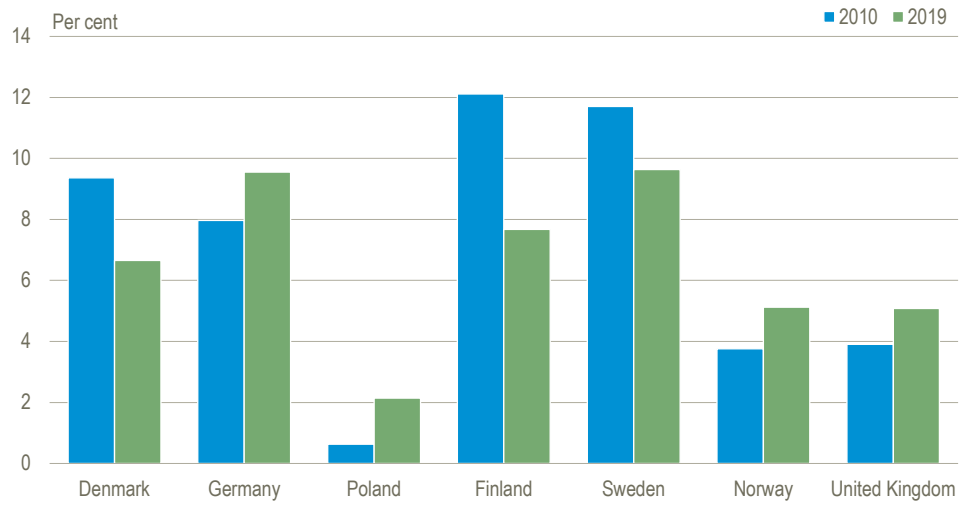
Note: The R&D spending covers private enterprises in all industries, whereas value added covers the 14 industries. However, this difference is marginal. For the United Kingdom, data from 2018 has been used instead of 2019.

Source: Eurostat, research expenditure (rd_e_berdindr2) and national accounts (nama_10_a64), constant prices.

Increase in R&D over value added compared to 2010

Compared with 2010, research spending measured in proportion to value added in the business sector has increased from 2.0 per cent to 2.5 per cent overall for the eight countries. Six of the countries have seen progress. Most notably in Poland, where research spending increased from 0.3 per cent to 1.1 per cent, and in the Netherlands, which saw an increase from 1.1 per cent to 2.1 per cent. Finland experienced the steepest decline from 3.9 per cent to 2.8 per cent, but also for Denmark, preliminary figures show a decline from 3.1 per cent to 2.8 per cent.

Figure 3.2 **R&D spending of the manufacturing industry in proportion to value added by country**



Note: For Sweden, data for 2011 has been used instead of 2010. For the United Kingdom, data from 2018 has been used instead of 2019.
Source: Eurostat, research expenditure (rd_e_berdindr2) and national accounts (nama_10_a64), constant prices.

Similar trend in the manufacturing industry

More than half of the business sector's research activity takes place in *manufacturing*, which is why the development here has great impact on the overall development in the indicator. However, manufacturing data is only available for some years and only for seven of the countries. In 2019, the manufacturing industry for all the countries combined spent 7.8 per cent of value added on research against 7.0 per cent in 2010. Germany and Sweden top the list with research spending close to 10 per cent in proportion to value added, followed by Finland and Denmark. Norway and the United Kingdom are clearly below average with shares of 4-5 per cent, while, in spite of a good progress, Poland had the lowest share.

Value added affects the picture

Development in the manufacturing industry's research spending as a share of value added should be assessed together with the development in value added. As described in chapter 2, Denmark, Germany and Poland showed relatively increased value added, but for Finland, Sweden, the United Kingdom and Norway it was declining. The declining share for the manufacturing industry in Denmark was primarily a result of strong growth in value added.

Conclusion: Increasing research spending in most of the countries

Since 2010, there has been a significant difference in the development in research spending in the business sector of the eight countries both overall and for the manufacturing industry. In most of the countries, the spending has increased as recommended in target 9.5, while Denmark and Finland have seen a decline. Poland has seen the most progress, but continues to be at a low level compared with the other countries.

3.2 Green goods and services

Sustainable products and the SDGs

A number of the SDGs aim for a transition to consumption and production with lower climate and environmental impact. This applies especially to SDGs *6. Clean water and sanitation, 7. Affordable and clean energy, 12. Responsible consumption and production* and *13. Climate action*. UNCTAD's recommendations encourage companies to report on their green investments, which can involve both transition to new products and improved production processes.

Statistics of green goods and services

Statistics on the production of green goods and services do not show directly sustainable investments, but the results can be used as an indication of the development in the investments. The EU statistics cover mainly the private sector's production of green goods and services and the related employment. Among the eight countries, it varies a great deal which industries that are considered to produce green goods and services, and for that reason, comparisons must be made with some caution. Since this is a relatively new set of statistics, the first year of results varies. Norway has not yet published the statistics, and thus the following results cover only seven countries.

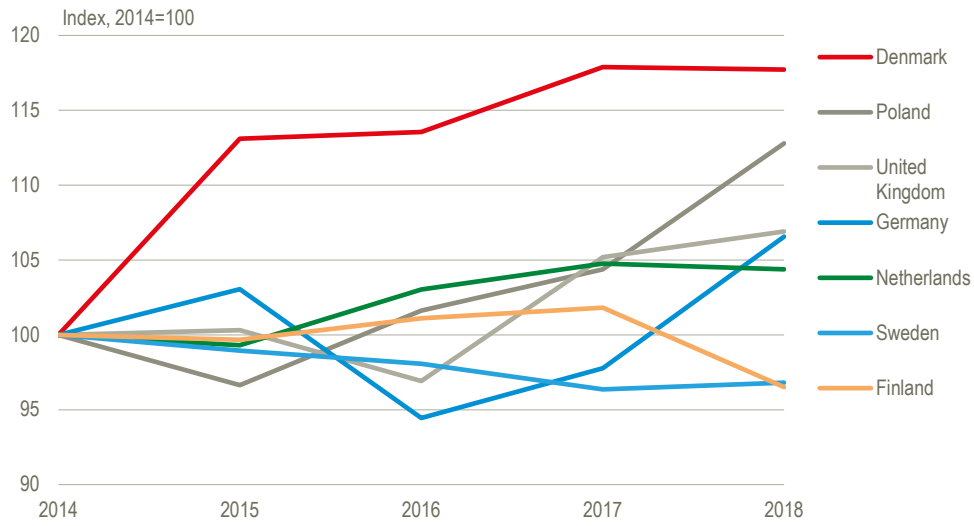
1.5m persons working with green goods and services

In 2018, a little less than 1.5m FTE (employment in full time equivalent) were used for the production of market driven green goods and services in the seven countries. In terms of employment, this is an increase of 10 per cent in the number of green jobs since 2014 – the first year with available statistics for all seven countries. Measured in proportion to the rise in total establishment-related employment, the rise in green goods and services was 6 per cent.

Major differences between the countries

The share of green jobs, stated in FTE, varies a great deal between the seven countries. In 2018, Finland had the highest share with 7.7 per cent, while Poland and the United Kingdom were at 1.2 and 1.3 per cent respectively. The average for all seven countries was 1.8 per cent. It is difficult to determine how much of the considerable difference that can be attributed to differences in methods. The relatively high level for Denmark (4.5 per cent), however, is very much an effect of the large production of windmills.

Figure 3.3 **Development in share of employment related to green goods and services**



Sources: Eurostat: Environmental goods and services (env_ac_egss1) and national accounts indicator for employment (nama_10_a64_e)

Increasing share in five out of seven countries

The importance of the production of green goods and services increased measured by the share of employment. Most of the countries saw an increase, while Sweden and Finland noted a small decline. The large rise for Denmark of 18 per cent must be seen in the light of the fact that the 2014 figures were most likely underestimated, which is why the real rise since 2014 was more like 10 per cent.

Conclusion: More green jobs

The volume of green goods and services has grown since 2014, indicating that the business sector contributes to the realisation of the SDGs related to the environment and green transition.

4. Greenhouse gases emission

Climate impact is key for sustainability

The emission of carbon dioxide (CO_2) and other climate forcing greenhouse gases is at the core of the work with sustainability. Via both international agreements and objectives in the framework of the EU, the eight countries are committed to strongly reduce emissions. In addition, some countries, e.g. Denmark, have defined supplementary national objectives.

Emission and SDG indicator

In the SDGs and the related indicators, target 9.4 *Upgrade all industries and infrastructures for sustainability* deals with sustainable technologies, and indicator 9.4.1 deals specifically with the emission of CO_2 (excl. other climate gases). The indicator is calculated as emission in relation to value added, i.e. the economic activity calculated as contribution to GDP. In the breakdown by industry below, focus is on total emission of greenhouse gases as well as emission in proportion to value added.

UNCTAD's recommendations on indicators at company level suggest both an indicator for the greenhouse gases emission that happens directly at the company and the emission to which it contributes e.g. when purchasing electricity.

Statistics regarding emission

The countries assess emission of CO_2 and other climate adverse substances and report to Eurostat in accordance with common guidelines. The account corresponds to the economic activity contained in the national accounts, i.e. also the international transportation, for example, which is significant for some of the eight countries – not least Denmark. In the following, emission covering the entire economy is examined. In other sets of statistics, the scope is geographical and does not include e.g. international transport.

The emission of greenhouse gases in the form of methane, nitrous oxide etc. is converted to CO_2 equivalents and is included in the figures, and emission figures are thus calculated in CO_2 equivalents, CO_2e. It should be mentioned that the figures for Denmark in Eurostat's database are marginally lower than the figures in Statbank Denmark due to differences in methods.

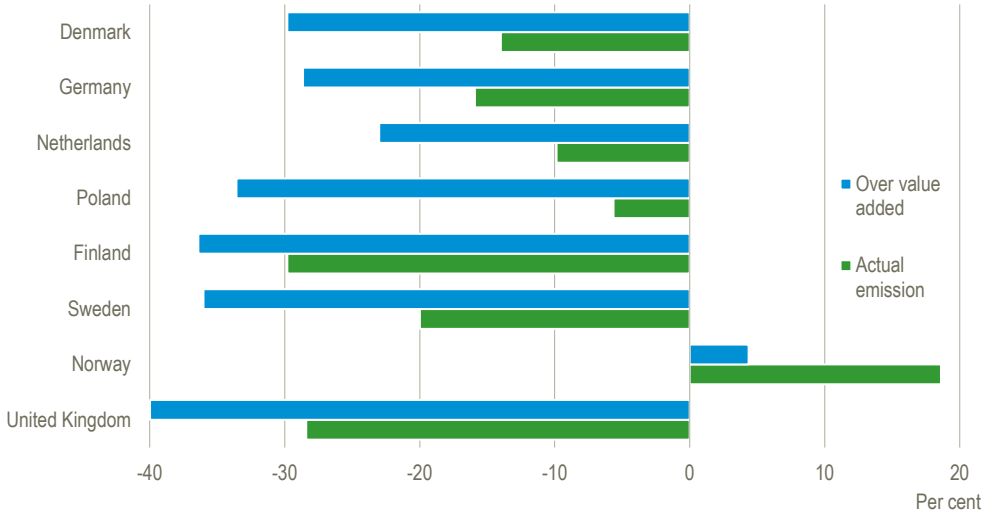
Emission account as Scope 1

In terms of industry, the emissions in the statistics have been included where the emission has taken place, a so-called Scope 1 statement. This means that the CO_2 emission from e.g. the production of electricity is included under *Energy supply* and not in the industries, where the electricity was used. In the publication *The Danish Business sector and the Sustainable Development Goals*, results were shown where the emission was attributed to the industries that had consumed the electricity and district heating, a so-called *Scope 2* account. An account of this kind does not currently exist in the Eurostat database.

Overall less emission from business activity

E.g. based on the Scope 1 approach, a comparison of the actual emission between industries is subject to uncertainty due to differences in the energy supply structure. In the following, the focus is mainly on the *relative development*. If we consider the emission as a whole for the eight countries and the 14 industries, we get a reduction of 16 per cent from 2010 to 2019 based on the data.

Figure 4.1 **Development in emission (CO2e) from business, 2019 compared to 2010, by country**



Note: For Norway, 2018 data was used as 2019 was not yet available.
Source: Eurostat, emission accounts by economic activity (env_ac_ainah_r2) and national accounts (nama_10_a64)

Large variation in the development

There are major differences at country level behind the average reduced emission from the private sector industries. Norway has seen an increase of 19 per cent since 2010, while the other countries have reduced their emission. The reductions ranged from 6 per cent in Poland and 10 per cent the Netherlands to almost 30 per cent in Finland and 28 per cent in the United Kingdom. Measured in proportion to value added in the industries, the ranking has changed a little, as Poland has reduced theirs significantly, and more than the Netherlands. For the eight countries overall, emission in proportion to value added was reduced by close to 30 per cent. However, the financial crisis in 2008/2009 affected value added in 2010 and, consequently, the point of reference is low.

The business structure impacts emissions

The availability of renewable energy sources as alternatives to fossil fuels may depend on the business structure in the different countries. Measured by emissions, specifically for 2019, it is notable that the transportation industry accounts for very different shares ranging from almost 60 per cent in Denmark, 41 per cent in Norway and just 8 per cent in Poland, which can generally be explained by international maritime traffic accounting for very different shares. Since transportation is mainly based on fossil fuels, which are difficult to replace completely with non-fossil fuels in the short term, the size of this industry affects the overall possibility of converting to other energy sources.

Table 4.1 **Distribution of emission (CO2e) 2019, by country and industry**

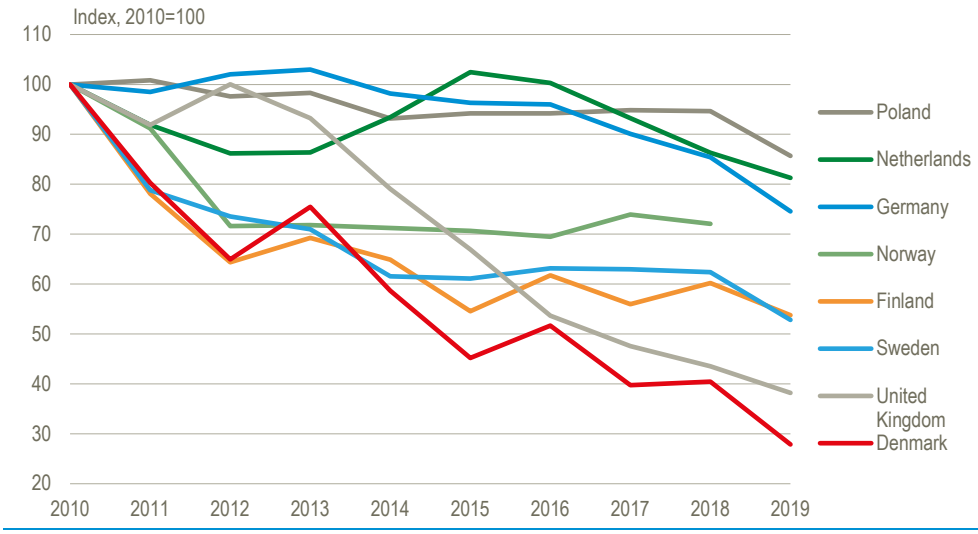
	Denmark	Germany	Nether-lands	Poland	Finland	Sweden	Norway	United Kingdom
	per cent							
Agricult., forestry and fishing	15.9	10.5	17.1	15.9	16.3	19.1	7.8	13.3
Mining and quarrying	2.0	0.6	1.4	5.6	0.9	2.4	23.2	6.4
Manufacturing	7.2	25.9	29.4	19.9	21.6	32.4	18.1	20.9
Energy supply	7.7	40.6	25.6	41.4	30.3	12.4	2.7	18.0
Water, sewerage and waste	3.2	2.9	3.5	3.5	4.5	3.1	2.1	6.3
Construction	2.2	1.5	2.1	0.3	2.6	3.9	2.9	3.6
Wholesale and retail trade	1.5	2.7	2.4	3.0	1.0	3.4	1.4	4.6
Transportation	59.1	13.3	15.5	7.5	21.3	20.5	41.4	23.6
Other activities	1.1	1.9	3.1	2.9	1.6	2.8	0.4	3.3

Note: *Other activities* covers six service activities among the 14 industries. At country level, the figures add up to 100 per cent. The figures for Norway are for 2018.
Source: Eurostat, emission accounts broken down by economic activity (env_ac_ainah_r2).

Positive tendency in energy supply

Another industry with significant variations between the countries is *Energy supply,* which produces electricity and district heating. Here, Norway stands out with its extensive use of water power, as *Energy supply* only accounts for 2.7 per cent of total CO2e emission. On the other hand, the energy sector accounts for a high share of the countries' emission in both Poland (41.4 per cent) and Germany (40.6 per cent), though it also has an effect that transportation accounts for relatively little in those two countries. Looking at the development in emission from the energy sector in the individual countries, there is a clear positive tendency towards reduced emission in all eight countries. The nature of the energy supply in 2010 impacts the prospect of reducing the emission both absolutely and relatively.

Figure 4.2 **Development in emission (CO2e) from energy supply, by country**

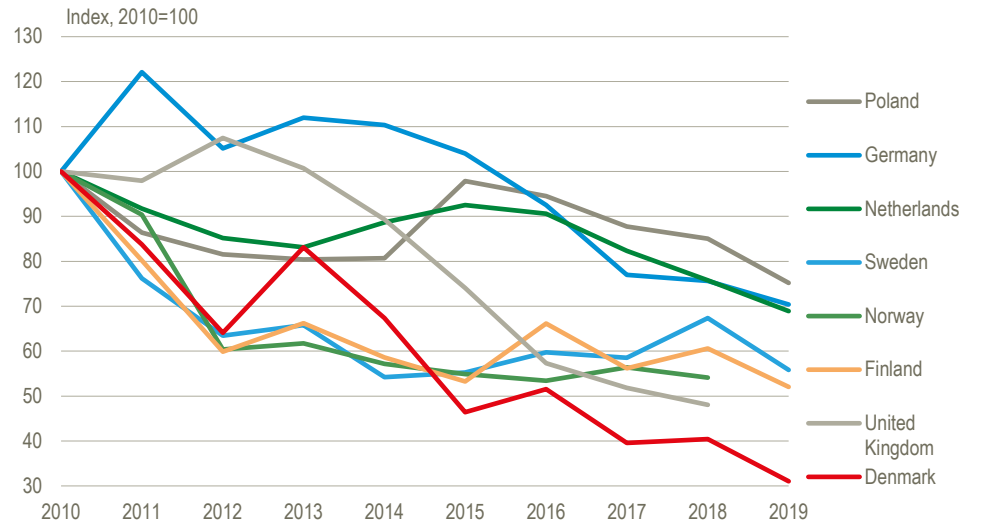


Note: Latest figures for Norway are for 2018.
Source: Eurostat, emission accounts broken down by economic activity (env_ac_ainah_r2).

Highest reduction in Denmark and the United Kingdom

Behind the altogether positive development, there is reason to make note of the big differences between the countries. Denmark has seen the highest reduction in emission from electricity, gas, steam and air conditioning supply of 72 per cent, followed by the United Kingdom with 62 per cent. Poland has only reduced their emission by 14 per cent, and the Netherlands by 19 per cent. The large reduction in Denmark can especially be attributed to heavily extended use of biomass and windmills in the energy production.

Figure 4.3 **Development in emission (CO2e) in proportion to value added from energy supply, by country**



Note: Calculation based on value added at constant prices. For Norway and the United Kingdom, the latest calculation is for 2018.
Source: Eurostat, emission accounts by economic activity (env_ac_ainah_r2) and national accounts (nama_10_a64)

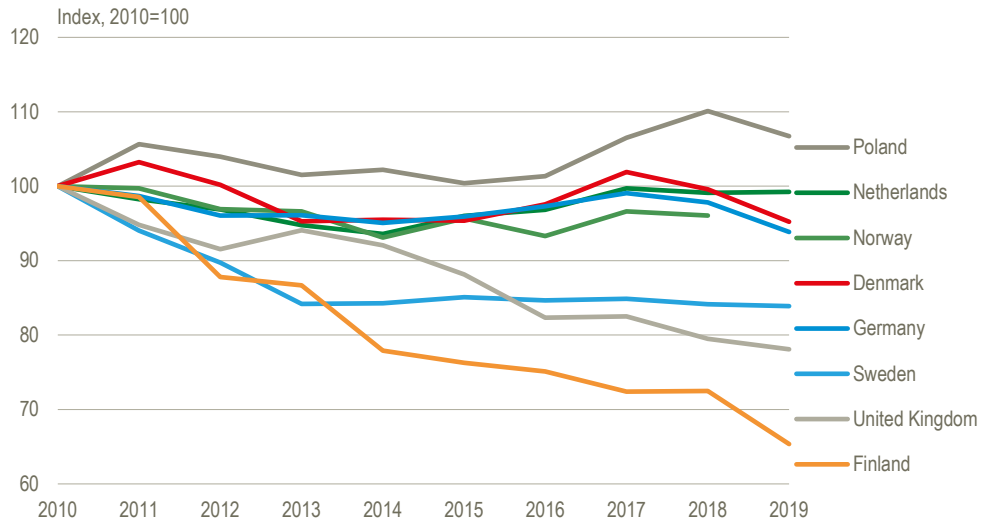
Adjustment for value added does not significantly change the picture

The general picture of the development in the energy sector's emission is more or less the same when considering the emission in proportion to the sector's value added in constant prices (by which the development reflects the physical production of the energy sector). Poland has seen a reduction in emission of 25 per cent since 2010 against 14 per cent calculated only on the basis of the volume of CO2e, which means that the actual reduction was obtained in spite of increased energy production in the sector. It should also be noted that Germany had increasing emission from the energy sector in the early years, calculated in absolute as well as relative terms, possibly caused by the gradual phase-out of nuclear power, which may have affected the use of other fuels as well as transition expenditure. However, since then, there has been a clear decline in the emission, as the emission in Germany in proportion to the sector's value added was reduced by 30 per cent from 2010 to 2019.

Minor absolute decline in emission from manufacturing

The emission from manufacturing, primarily CO2e from the share of fossil fuels used directly at the manufacturing sites, was reduced in seven of the eight countries from 2010 to 2019, for the eight countries overall by 8 per cent. Poland has increased its emission by 7 per cent, whereas the biggest reductions were seen in Finland by 35 per cent and in the United Kingdom by 22 per cent. In four countries, Denmark, Germany, the Netherlands and Norway, the reduction ranged from 1 to 6 per cent. The statistics on which this publication is based do not provide a basis for identifying whether the development is a result of less energy-intensive production, transition to non-fossil fuels or increased energy efficiency.

Figure 4.4 **Development in emission (CO2e) from manufacturing, by country**

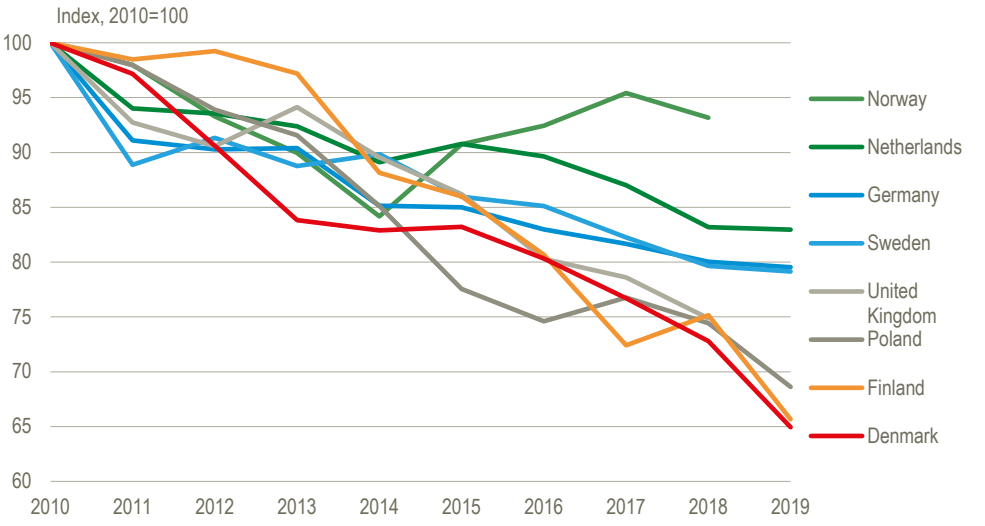


Note: In the emission accounts, the latest figures for Norway are from 2018.
Source: Eurostat, emission accounts broken down by economic activity (env_ac_ainah_r2).

Major decline when adjusting for value added

Taking generally increasing value added (and most likely increased production) into account over the period in manufacturing, the tendency towards reduced emission is more clear with an overall reduction for the eight countries of 22 per cent. Norway has the smallest reduction of 7 per cent (2018), whereas Denmark, Finland and Poland all have seen a reduction of more than 30 per cent from 2010 to 2019.

Figure 4.5 **Development in emission (CO2e) in proportion to value added from manufacturing, by country**



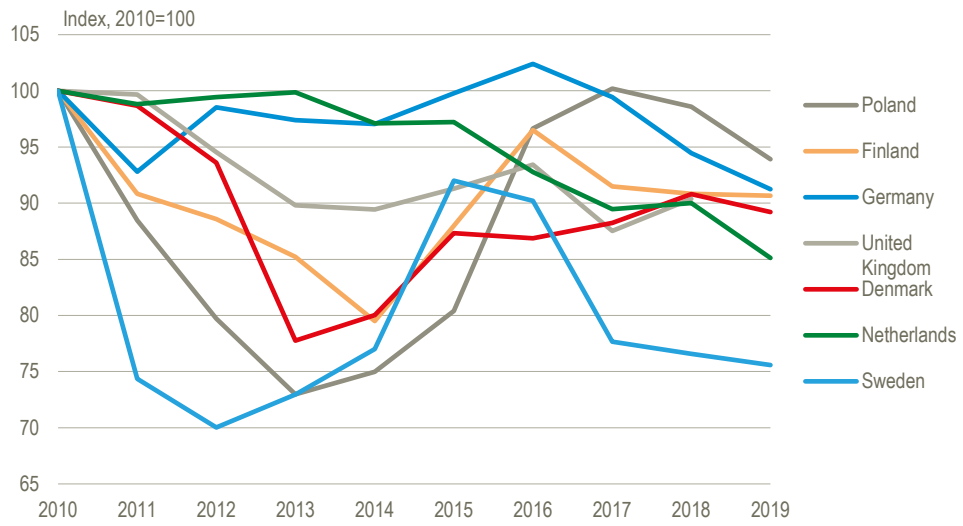
Correction of original version.

Note: The calculation is based on value added at constant prices. For Norway and the United Kingdom, the latest calculated figures are from 2018.
Source: Eurostat, emission accounts by economic activity (env_ac_ainah_r2) and national accounts (nama_10_a64)

Significant differences in emission in proportion to value added

The actual figures behind the development in emission in proportion to value added in *manufacturing* are very different. In 2018, e.g., Denmark emitted 160 tonnes CO2e per EUR 1m in value added, whereas the Netherlands emitted 600 tonnes per EUR 1m and Norway 500 tonnes. The explanation is most likely differences in the energy-intensity of the production in the individual countries, just like the combination of fuels/energy sources plays a major part. The calculation for Poland shows 850 tonnes CO2e per EUR 1m in 2018. However, this level is heavily influenced by differences in purchasing power, as an adjustment for purchasing power parity reduces the figure to approximately 500 tonnes per million EUR.

Figure 4.6 **Development in emission (CO2e) in proportion to value added from transportation, by country**

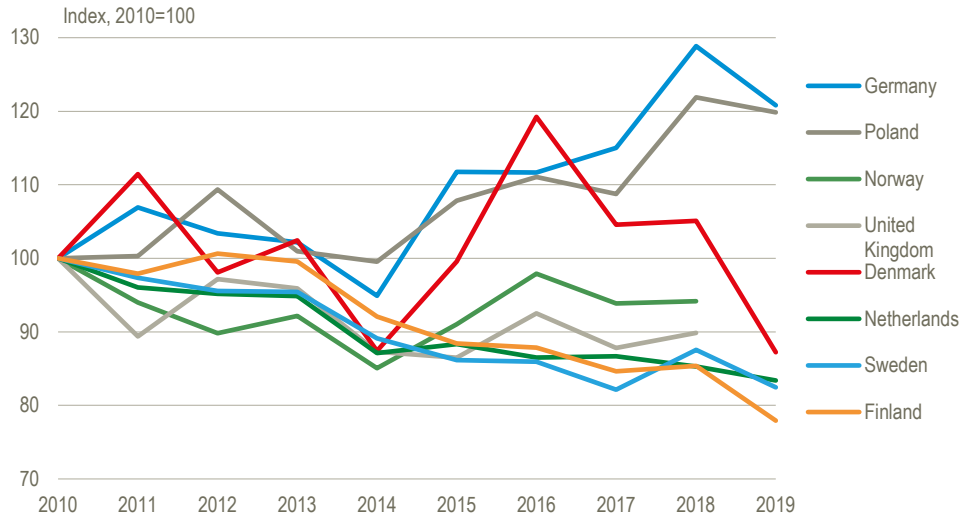


Note: The calculation is based on value added at constant prices. For the United Kingdom, the latest calculations are from 2018.
Source: Eurostat, emission accounts by economic activity (env_ac_ainah_r2) and national accounts (nama_10_a64)

No certain trend for the transportation industry

The development in the emission in transportation in relation to value added indicates that the emission has increased less than value creation from 2010 to 2019. However, for many countries, variations are so extensive that the statistical uncertainty makes it difficult to draw a reliable conclusion. Note that the data for Norway has been left out of the figure, as it shows soaring emissions from the sector, which are not likely to be true. These heavy increases may also help explain that Norway for the 14 industries altogether has seen the smallest improvement measured by this indicator, see figure 4.1.

Figure 4.7 **Development in CO2e emission in proportion to value added from agriculture**



Note: The calculation is based on value added at constant prices. For Norway and the United Kingdom, the latest calculations are for 2018.
Source: Eurostat, emission accounts by economic activity (env_ac_ainah_r2) and national accounts (nama_10_a64)

Generally positive trend for agriculture, forestry and fishing

The emission from agriculture and other primary activities account for a relatively big share in all the countries, see table 4.1. For most of the countries, there is an improved environmental relation between emission and value added since 2010. However, for Germany and Poland, the emissions in proportion to value added increased during the period, but this was only due to declining value added. This example shows the importance of looking at the numerator as well as the denominator in the indicator calculation when interpreting the results.

Conclusion: The business sector contributes to SDGs on reduced emission, especially measured in proportion to value added

It is possible to conclude that the business sector contributes to SDG 9.4 on reduced emission of CO_2 and other climate gasses. There is a reduction in the absolute emission and an even stronger reduction when measuring the emission in proportion to value added. This means that production and emission are no longer as tightly linked.

Due to very different business structures, it is not possible to rank the countries according to their compliance with the environmental SDGs. However, the positive trend is clear when looking at specific industries such as *Energy supply* and *Manufacturing*, whereas the trend is less clear within the emission intensive transportation industry. With respect to countries, it should be noted that seven of the eight countries have reduced their emission both in absolute terms and measured in proportion to value added. The significant economic growth of Poland has been possible with a small reduction in the emission. The indicators for Norway point in the opposite direction of the general trend, which may be due to uncertainty in the emission accounts.

5. Gender equality and equal pay

Gender equality in focus

For many years, gender equality has been in focus in both Denmark and the EU, supported by e.g. legislation in the area, and it is also an objective in the SDGs. It is generally phrased as a goal of diversity in the labour market, so that it is inclusive and accommodates everyone irrespective of gender, origin and any disabilities. There are also goals to reduce economic inequality in society in general, which is also affected by business sector activities. Below, we focus on the composition of employees and pay conditions in the private sector in the eight countries.

5.1 Equal participation in the labour market

Composition of employees and the SDGs

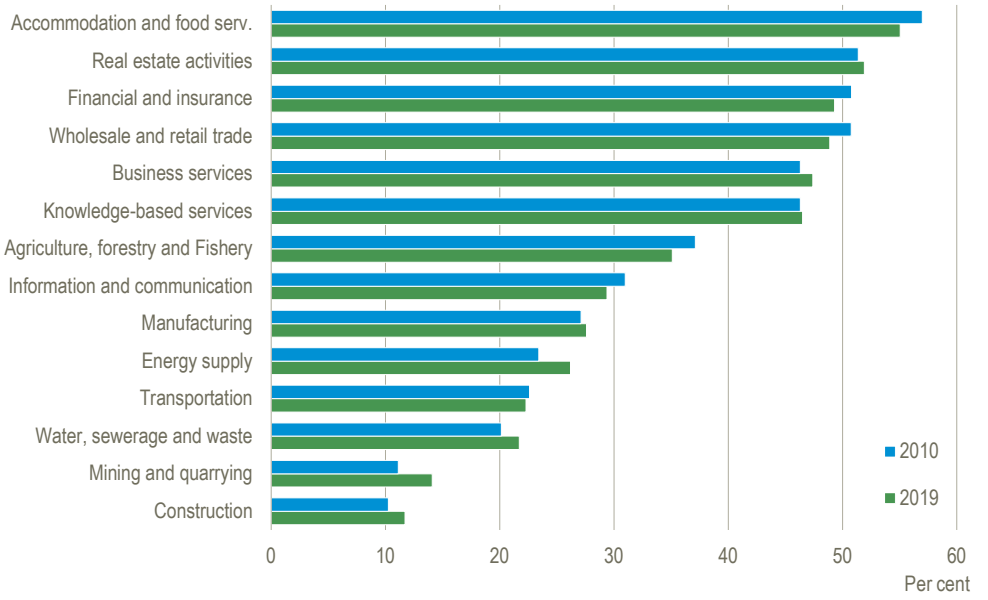
Target 8.5 in the SDGs is about achieving full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value. Accordingly, there should be no barriers for persons of any status to become part of the labour market. The indicator for this is whether the composition of employees has become more even. UNCTAD proposes indicators that show the gender equality in top management, corresponding most directly to SDG 5.5 on more women in management.

EU statistics of employee composition

In a Eurostat context, the common statistics on employees and the composition hereof are based on accounts that correspond to the *Labour Force Survey*, which is built on quarterly interviews. Data provides e.g. a basis for breaking down employees by industry and gender.

The breakdown by management function that was included in the publication *The Danish business sector and the sustainable development goals* does not exist in the common statistical basis, which is why the development cannot be analysed by this criterion. Nor are there any common EU statistics on the composition of boards of directors.

Figure 5.1 **Women's share of the labour force by industry**



Note: The figures cover employment for the age bracket 15-64 years.
Source: Eurostat, Labour Force Survey by detailed economic activity (lfsa_egan2)

Women account for 36 per cent of employees in the business sector

The total number of employees in the 14 industries in the eight countries amounted to just over 73m persons in 2019. Women accounted for 36 per cent hereof, varying from 32 per cent in Norway to 37 per cent in Poland and Germany. Compared with 2010, there are only minor differences overall. In 2019, women's total labour force participation in all countries was maximum 10 per cent lower than that of men, and it has increased slightly since 2010, most clearly for Germany and the Netherlands. In this way, the figures indirectly tell us that public sector employment in all countries throughout the period is characterised by a majority of women.

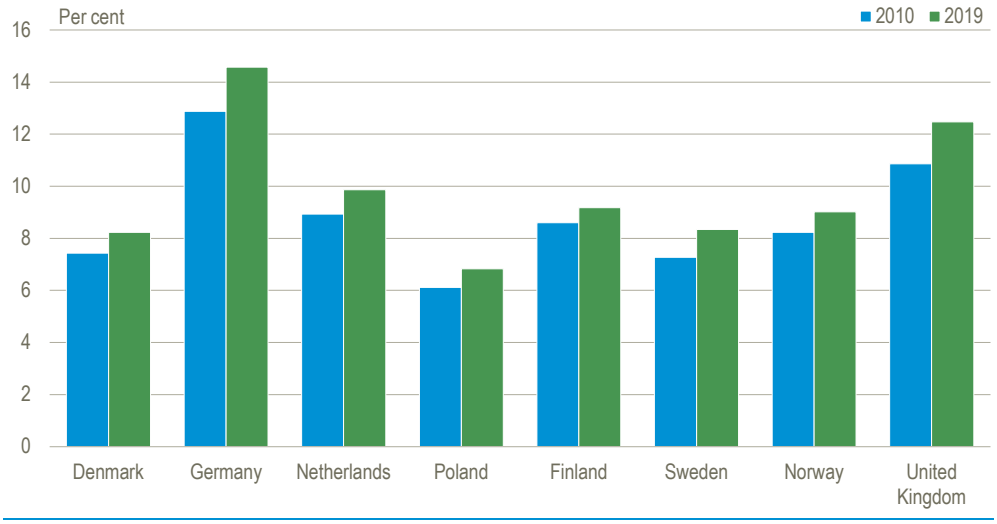
A few industries with a majority of women

There are major differences between the share of women in the different industries – and the picture is almost the same in 2010 and in 2019, although with a tendency to a more even composition, see figure 5.1. With just over 10 per cent, *construction* has the lowest share of women. On the other hand, there is a narrow majority of women in the industries *Accommodation and food serv.* and *real estate activities and renting*, whereas there is an even distribution in *wholesale and retail trade* and *financial and insurance*. With 35 per cent, the share of women in *agriculture, forestry and fishing* is relatively high, which may have to do with the fact that many women are part-time employed in small farms, e.g. in Poland. An account in full-time equivalent would probably show a lower share.

Lowest share of women in manufacturing in the Netherlands

Manufacturing workers in many industries have typically been men, and the figures show that this is generally still the case. However, there are differences between the countries, since the share of women in manufacturing in 2019 was lowest in the Netherlands at 22 per cent and also less than 25 per cent in Norway and Sweden. On the other hand, 32 per cent of employees in manufacturing in Poland are women, and in Denmark, this share was close to 30 per cent. The shares for 2019 have barely changed compared with 2010, except for the United Kingdom, where the share of female industrial workers has increased.

Figure 5.2 **Women's share of the labour force in construction by country**



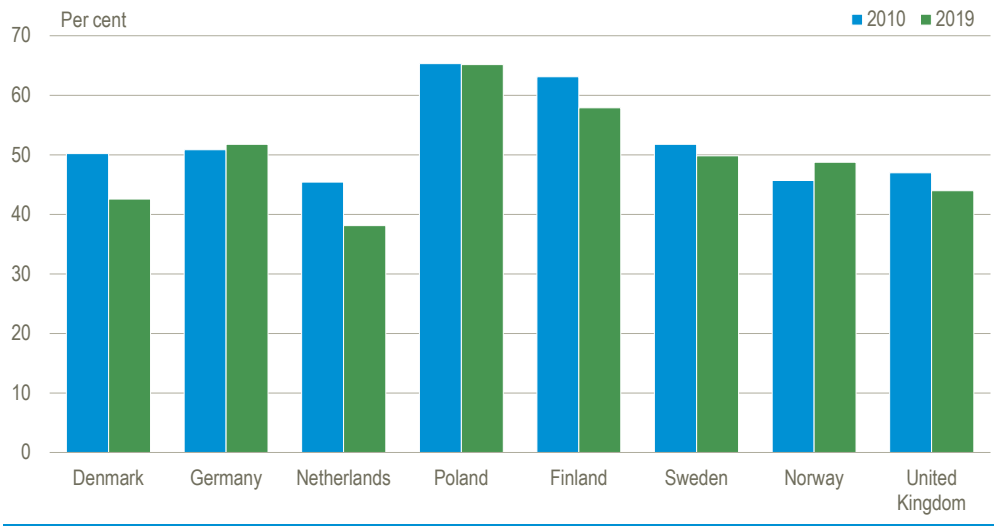
Note: The figures cover employment for the age bracket 15-64 years.
Source: Eurostat, Labour Force Survey by detailed economic activity (lfsa_egan2)

More women in construction in all countries

Construction is another industry that traditionally employs few women. There is a tendency here towards more women, and this is true for all the eight countries. There is typically an increase of 2-3 percentage points from 2010 to 2019. Despite a small increase, Poland still has the lowest share of women with 7 per cent. In Germany, the share is more than twice this share with over 14 per cent women in 2019. It should be noted that the group of employees in the industry includes

both direct construction work and office work, where the latter often has a high share of women. Whether there has been a shift over the decade in the number of employees between the two types of jobs cannot be concluded based on the statistics.

Figure 5.3 **Women's share of employees in finance and insurance, by country**



Note: The figures cover employment for the age bracket 15-64 years.
Source: Eurostat, Labour Force Survey by detailed economic activity (lfsa_egan2)

Fewer women are working in finance, especially in Finland and the Netherlands

The share of women in *finance and insurance* has declined from 51 per cent in 2010 to 49 per cent in 2019. The biggest decline is seen in Denmark with almost 8 percentage points and in the Netherlands with a decline of 7 percentage points. Only in Germany and Norway, the share of women has increased by 1 and 3 percentage points respectively. The explanation of this general development probably lies in the fact that much of the direct customer contact typically handled by women has been replaced with digital self-service solutions. On the other hand, it has to a greater extent been possible to maintain job functions handled by a relatively high share of men, e.g. management and consulting.

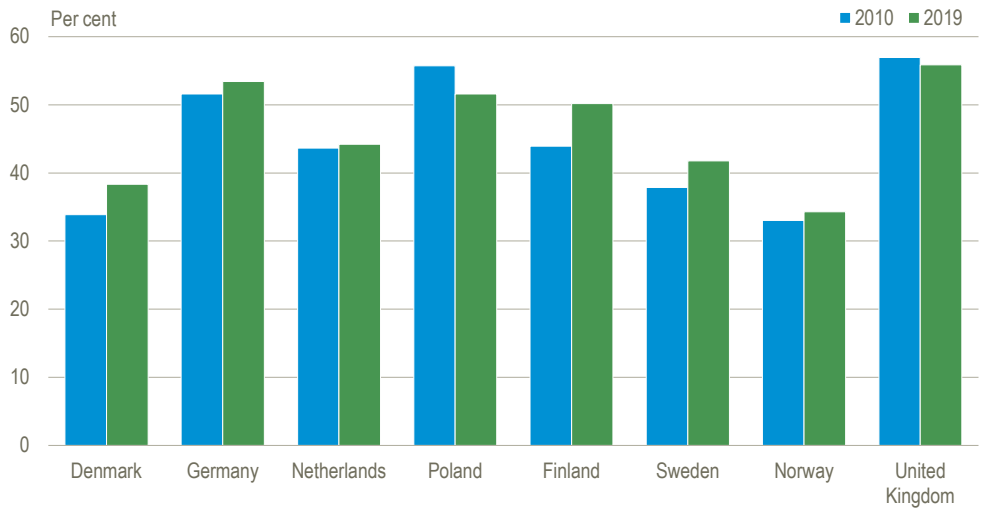
Over 50 per cent women in the industry in four countries

In spite of the general decline in the share of women in finance and insurance, there is still a majority of women in 2019 in three countries, with the highest shares in Poland (65 per cent) and Finland (58 per cent), while there is just over 50 per cent female employees in the industry in Germany. Only in the Netherlands, the share of women in the industry is below 40 per cent.

Mixed picture in real estate activities

Real estate activities varies in importance in the eight countries, from 1 per cent of employees in the 14 industries in the Netherlands to 3 per cent in Sweden, see table 2.1. This may impact the gender composition of employees in the industry, which also varies a great deal. In the United Kingdom, Poland, Germany and Finland, the share of women was over 50 per cent in 2019, while in Denmark and Norway, it was less than 40 per cent. It probably makes a difference whether the letters of properties employ their own staff for cleaning services, for example, or outsource these services – in which case the employees are included in *Business services*. Regardless, it is worth noticing that the share of women in the real estate industry has increased in six of the eight countries, whereas the figures for Poland and the United Kingdom show a decline.

Figure 5.4 **Women's share of employees in real estate activities, by country**



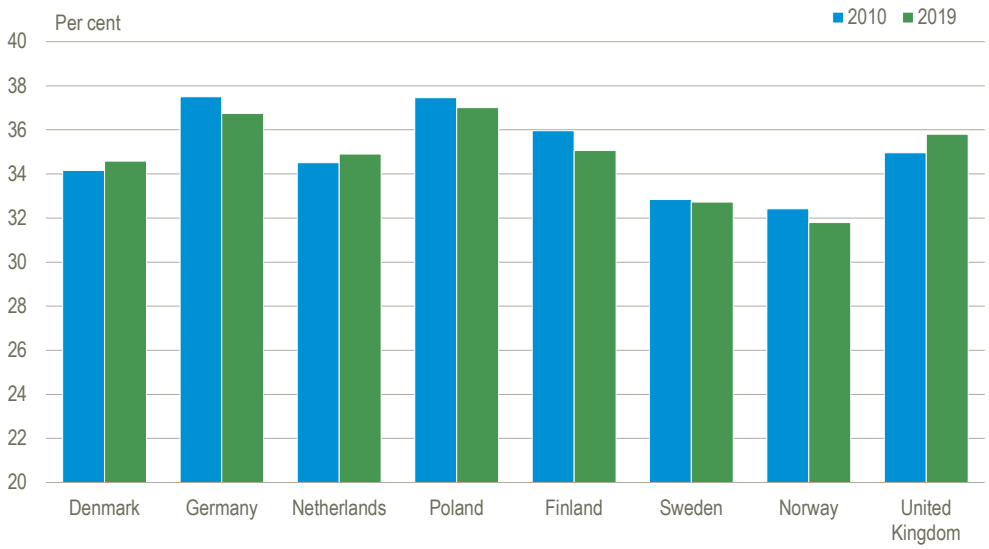
Note: The figures cover employment for the age bracket 15-64 years.
Source: Eurostat, Labour Force Survey by detailed economic activity (lfsa_egan2)

Majority of women in Accommodation and food service

The biggest share of women is seen in accommodation and food service activities, although it has declined from 57 per cent in 2010 to 55 per cent in 2019 in the eight countries. The relative decline is almost the same for all the countries, and for Sweden, it has brought the share of women below 50 per cent. In the Netherlands and in the United Kingdom, the share of women in the industry basically remains unchanged.

Altogether, there is no change in the share of women in private enterprises from 2010 to 2019, see figure 5.5. SDG 8.5 on more diversity, including a more equal gender composition, has thus only been achieved to a limited extent, although progress has been made in some industries, especially in *construction*, with an increasing share of women, though from a low starting point. However, it is noticeable that the relatively large differences in the share of women between the countries were reduced over the 10 year period, where there are signs of a more uniform employment structure in the eight countries in terms of the share of women in private enterprises.

Figure 5.5 **Women's share of the labour force in the business sector by country**



Note: The figures cover employment for the age bracket 15-64 years.
Source: Eurostat, Labour Force Survey by detailed economic activity (lfsa_egan2)

5.2 Equal pay

Equal pay is specifically mentioned in the SDGs

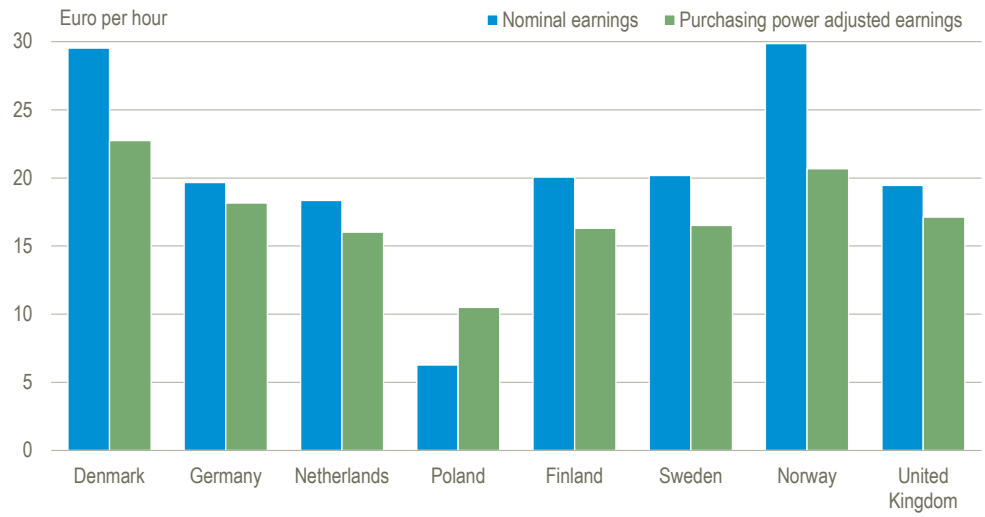
Equal pay for work of equal value is most specifically addressed in the SDG's in same target as labour market equality in general (8.5). Moreover, gender equality is the headline of SDG goal 5. SDG goal 10 is about reducing inequality and is most specifically mentioned in target *10.1 Reduce inequality within and among countries*. It is part of UNCTAD's proposal for indicators that enterprises should report on pay broken down by function and gender.

EU statistics for structure of earnings

Every four years, Eurostat publishes structure of earnings statistics according to job function and a number of employment conditions. As for actual remuneration broken down by industry and gender, only a relatively broad breakdown exists with results for all industries, except from *agriculture, forestry and fishing* as well as the public sector. These statistics are useful for gaining an overview of the differences between the countries. The statistics concern enterprises with at least ten employees and are available for 2010, 2014 and 2018.

As for pay gap, Eurostat has a series of tables on *Gender pay gap*, including a table (earn_gr_gpgr2), which shows the pay gap by economic activity - not adjusted for position, level of seniority etc. In principle, it provides a basis for analysing the development in the pay gap of the different industries. However, the statistics do not seem sufficiently robust at industry level, and thus we have chosen to use only aggregate results at country level in the following.

Figure 5.6 **Hourly earnings in the business sector by country 2018**



Note: The results cover all industries except from O, the public sector. The figures cover gross earnings per hour including all components of remuneration.
Source: Eurostat, Structure of earnings statistics (earn_ses18_14 and earn_ses10_14)

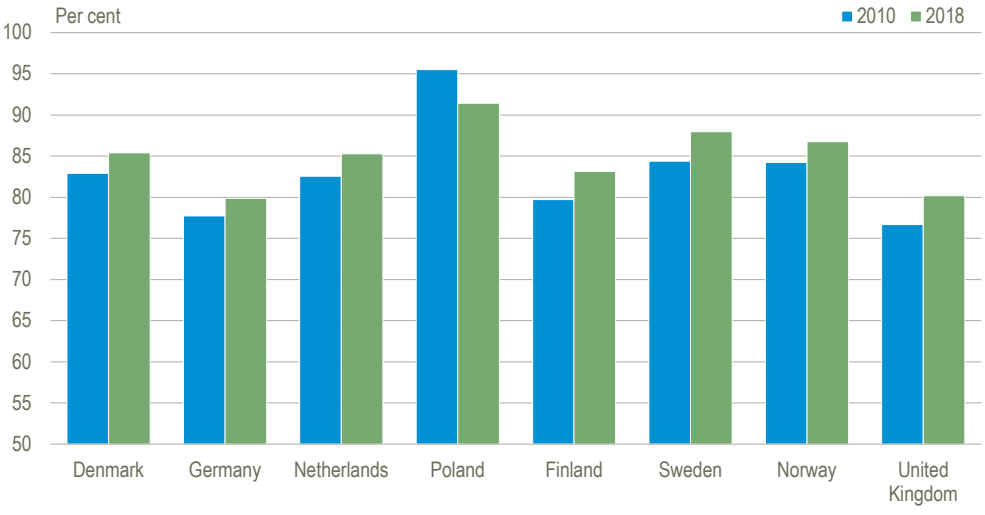
Difficult comparison between countries

A comparison of nominal earnings across countries is associated with some level of uncertainty. To some extent, it is possible to adjust for price level differences, but additional factors, such as rates of taxation, affect the real value of earnings, just as it can be difficult to implement the exact same definition across countries. With these reservations, the statistics are estimated to give a reasonable picture of the level and development since 2010.

Major pay gaps

In 2018, there was huge variation in pay level across the countries, especially when looking at the nominal values. Earnings were four times higher in Denmark and Norway than in Poland. Adjusted for differences in purchasing power, the variation is smaller, but still with just half the hourly pay in Poland compared to Denmark, which is at the top of the eight countries. Since 2010, the differences have been slightly reduced, which is positive in relation to the SDG target of reduced inequality.

Figure 5.7 **Hourly earnings of women in proportion to men in the business sector by country**



Note: The results cover all industries except from O, the public sector. The pay gap is calculated based on gross earnings per hour including all components of remuneration.
Source: Eurostat, Structure of earnings statistics (earn_ses18_14)

Slowly approaching equal pay

The female employees in the business sector are paid less than their male colleagues, typically in the order of 15 per cent. However, the difference has been significantly reduced from 2010 to 2018 in all countries except from Poland, which on the other hand had the smallest gender pay gap in both 2010 and 2018. Among the Nordic countries, Sweden comes closest to equal pay, as women lagged 12 per cent behind men, whereas Germany and the United Kingdom both in 2010 and 2018 had the widest pay gap, as women were paid approximately 20 per cent less than men.

Based on the statistics, it is not possible to clarify to what extent the relatively wide pay gaps can be explained with differences in education, job function or level of seniority, but the relatively large differences between the countries, however, suggest that more countries can further narrow the gender pay gap.

Conclusion: Narrowed pay gap, but apparently still a long way to go

The statistical information on earnings and gender pay gaps generally suggest that the pay gaps have been reduced since 2010. However, the figures also suggest that there are still major differences between the earnings of women and men in some countries, especially Germany and the United Kingdom.

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