



European Construction Sector Observatory

Country profile **Denmark**

September 2020



In a nutshell

The Danish economy recorded a relatively strong growth over the past years, reaching DKK 2.3 trillion (EUR 302.0 billion) in 2019 (+2.4% in comparison to 2018) in terms of **Gross Domestic Product (GDP)**. As a result of overall improvement in the general economy, the Danish broad construction sector also experienced continuous growth.

The total **number of enterprises** in the broad construction sector grew by 15.0% over the period 2010-2019.



In 2019, the number of enterprises in the broad construction sector stood at 72,741, with the narrow construction sub-sector accounting for 48.0% of the total.

Prior to COVID-19 pandemic, the construction market in Denmark was on his peak, showing high volumes of production, low unemployment and growing investments in residential construction, renovations and public infrastructure.

The **volume index of production** in the narrow construction sub-sector increased by 16.1% over the period 2015-2019. Similarly, the construction of buildings and civil engineering increased by 16.4% and 13.9% respectively over the same period.

The **turnover** of the broad construction sector touched EUR 68.4 billion in 2017, which represents a growth of 54.2% over the period 2010-2017. It increased further to EUR 73.9 billion in 2019¹, 66.7% above the 2010 levels. In 2019, more than half (52.7%) of the total turnover was generated by the narrow construction sub-sector, tailed by the

real estate (27.2%), architectural and engineering activities (12.0%) and manufacturing (8.2%) sub-sectors.

The **gross operating rate** of the broad construction sector², which gives an indication of the sector's profitability, stood at 20.5% in 2017³, 1.7 percentage points (pps) higher than 2010 levels, and higher than the EU-27's 2017 average of 16.6%.

Total turnover in the broad construction sector between 2010 and 2019




66.7%

In 2019, employment in the sector reached to its highest level since 2010. In 2019, the number of **persons employed** in the broad construction sector stood at 325,209⁴, 25.9% above the 2010 level. This was mainly driven by the increase in terms of people employed in architectural and engineering activities (+32.1%), followed by the narrow construction (+28.3%), manufacturing (+19.7%) and real estate activities (+17.6%) sub-sectors in the period 2010-2019.

The shortage of **skilled labour** at a broader level has eased recently, and it just remains specific to certain sub-sectors and geographic regions in Denmark. The reported numbers of unsuccessful recruitments are also declining on a broader economy level⁵.

The **housing market** in Denmark in 2019 characterised by a growing housing prices. A new upcoming system for property taxation, coupled with high residential construction activity and previously introduced macroprudential measures are likely to curb housing price inflation further,

regardless of mortgage interest rates being at historical lows⁶. However, in 2019, the overall house price index for dwellings was 17.2% above the 2015 level. Specifically, existing dwellings reported the highest increase (17.3% since 2015). The number of total building permits issued increased from 17,097 in 2010 to 26,313 in 2019. This represented a growth of 53.9% over the period 2010-2019.

House price index for total dwellings between 2015 and 2019  **17.2%**

In relation to **the civil engineering sector and more especially infrastructures**, the Danish government announced its plan of negotiating an agreement on infrastructure investments. The latter will tackle the issue of road congestions, by supporting sustainable public transport and cycling infrastructures⁷. One of the most prominent infrastructure projects, the **Fehmarn Belt Tunnel**, is planned to start on January 2021. With a EUR 7.4 billion budget partly financed by EU Funds, this project aims at connecting tunnel between Denmark and Germany, with a view to reduce travel time.

The Danish construction sector faces other **challenges** as well. It is characterised by a high level of insolvency, majorly in the small-scale businesses in Denmark.

The payment duration in Denmark has worsened in 2019, in comparison with last year. Moreover, the measures planned to protect SMEs from late payment are missing in Italy. This reflects poor late payment record in the sector.

The ongoing COVID-19 pandemic is expected to have mid-term impact on the Danish construction sector. Apart from company insolvencies, the sector has also seen few construction and infrastructure projects being put on hold as a result of containment measures. However, in the long run, the future of the Danish construction sector appears promising, with government strategies in relation to skills and digitalisation in place. The 2020 Budget Bill has allocated a noticeable rise in public expenditure on primary schools and a broad political agreement on October 2019 reserved DKK 102.0 million (EUR 13.7 million) for initiatives to upskill the low skilled workers⁸.

Table of Contents

In a nutshell	2
1 Key figures	5
Construction market.....	5
Productivity	6
Turnover and profitability	6
Employment	7
2 Macroeconomic indicators	9
Economic development.....	9
Demography and employment.....	9
Public finance	9
Entrepreneurship and access to finance	10
3 Key economic drivers of the construction sector	11
Business confidence	12
Domestic sales	12
Export of construction-related products and services	13
Access to finance in the construction sector.....	14
Access to housing	14
Infrastructure.....	15
4 Key issues and barriers in the construction sector	16
Company failure	16
Trade credit	16
Late payment.....	16
Time and cost of obtaining building permits and licences	17
Skills shortage	17
Sector and sub-sector specific issues	19
5 Innovation in the construction sector	20
Innovation performance.....	20
Eco-innovation and digitalisation	20
6 National and regional regulatory framework	23
Policy schemes.....	23
Building regulations.....	24
Insurance and liability related regulations	25
7 Current status and national strategies to meet Construction 2020 objectives	26
TO 1 – Investment conditions and volumes	26
TO 2 – Skills.....	27
TO 3 – Resource efficiency / Sustainable construction	29
TO 4 – Single Market	30
TO 5 – International competitiveness	30
8 Outlook	33

1

Key figures

Construction market

In 2019⁹, the **number of enterprises** in Denmark in the broad construction sector amounted to 72,741, representing an increase of 15.0% since 2010. The real estate activities sub-sector reported the greatest growth (+22.0%), followed by the architectural and engineering activities (+12.7%) and narrow construction (+10.6%) sub-sectors. On the contrary, the manufacturing sub-sector experienced a 1.4% decline over the 2010-2019 period. Companies in the narrow construction sub-sector accounted for 48.0% of the total (Figure 1), followed by the real estate (41.4%), architectural and engineering activities (8.8%) and manufacturing (1.8%) sub-sectors.

Number of enterprises in the broad construction sector between 2010 and 2019



15.0%

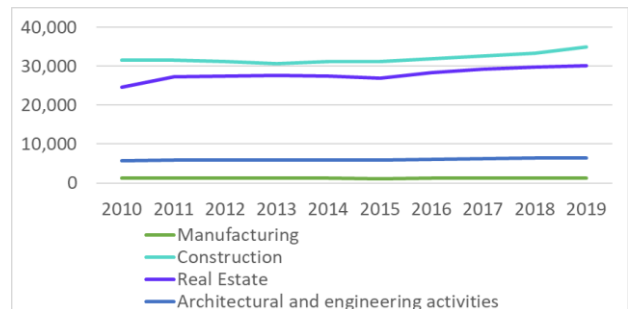
The production in the construction increased since 2010. The **volume index of production** in the narrow construction sub-sector and in construction of buildings increased by 16.1% and 16.4% respectively in 2019 as compared to 2015 (Figure 2). Similarly, the volume index of production in civil engineering surpassed the 2015 level by 13.9% in 2019, primarily driven by increase in public investment in transport infrastructure (see TO 1 - Investment conditions and volumes).

Volume index of production in the construction of buildings between 2015 and 2019



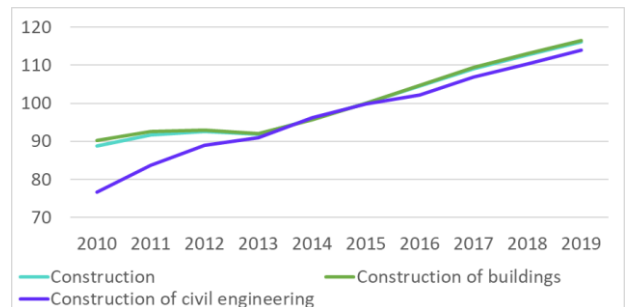
16.4%

Figure 1: Number of enterprises in the Danish broad construction sector between 2010 and 2019



Source: Eurostat, 2020.

Figure 2: Volume index of production in the Danish construction sector between 2010 and 2019 (2015=100)



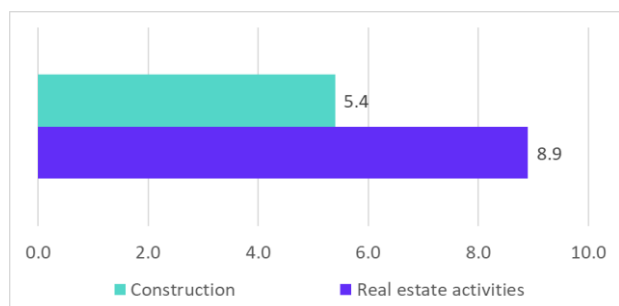
Source: Eurostat, 2020.

By 2019¹⁰, the **total added value of the broad construction sector** amounted to EUR 32.1 billion, registering a growth of 61.1% since 2010. The narrow construction sub-sector accounted for 40.4% of the total added value of the broad construction sector, followed by the real estate activities (39.9%), architectural and engineering activities (12.4%), and manufacturing (7.3%) sub-sectors.

The **share of gross value added** of the broad construction sector in the GDP reached 15.7% in 2017¹¹, compared to 16.3% in the EU-28¹², with real estate activities having the largest contribution (8.8%), followed by narrow construction sub-sector (4.8%), architectural and engineering activities (1.4%), and manufacturing

(0.8%). In 2019, the share of gross value added of the real estate activities and the narrow construction sub-sectors reached 8.9% and 5.4% respectively (Figure 3)

Figure 3: Gross value added as a share of GDP in the Danish broad construction sector in 2019¹³ (%)



Source: Eurostat, 2020.

Denmark consists of five NUTS 2 regions, namely *Hovedstaden*, *Sjælland*, *Syddanmark*, *Midtjylland* and *Nordjylland*. The gross value added is not equally split over these regions. In 2019, *Midtjylland* accounted for almost 26.1% of the gross value added in the narrow construction sub-sector, followed by *Hovedstaden* (25.9%) and *Syddanmark* (22.3%). Similarly, in the real estate activities sub-sector, *Hovedstaden* accounted for the highest share (28.9%) of the gross value added in 2019, followed by *Midtjylland* (22.9%) and *Syddanmark* (22.7%). This reflects the locations of the biggest cities in these regions (Copenhagen, Aarhus and Odense respectively).

Productivity

The apparent labour productivity in real estate sub-sector reached EUR 205,331.8 in 2019¹⁴, representing highest growth (+47.9%) amongst other sub-sectors over the period 2010-2019.

Likewise, the apparent labour productivity in manufacturing sub-sector reached EUR 84,142.8 in 2019, representing an increase by 32.1% over the 2010-2019 period. This was followed by the narrow construction sub-sector, which experienced a growth (24.3%) over the same period, reaching EUR 68,471 in 2019. However, the architectural and engineering activities sub-sector increased slightly by 1.9% over the 2010-2019 period, reaching EUR 87,950 in 2019 (Figure 4).

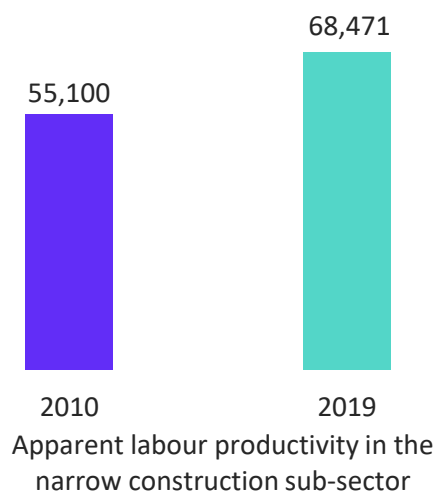
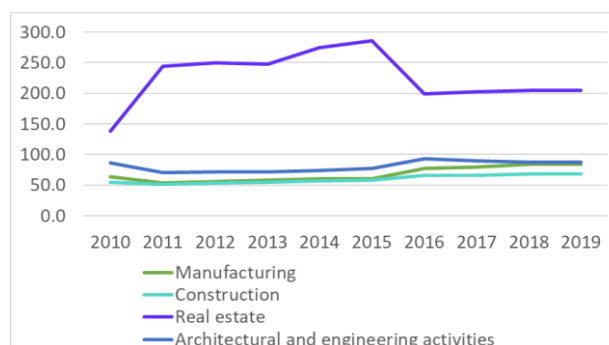


Figure 4: Labour productivity in the broad construction sector in Denmark between 2010 and 2019 (EUR k)



Source: Eurostat, 2020.

The productivity gap between strong performing companies and low performers has increased markedly over the last two decades. There is much need of policies supporting smaller and low performing firms to boost their productivity. This will serve as an aid towards young firms as well. Moreover, with the purpose of supporting productivity through innovation, Danish firms can also benefit from enhancements in the quality of workforce and skills that shall promote digitalisation¹⁵.

The widening productivity gaps between large and small firms highlights shortcomings in the diffusion of technological advances.

Turnover and profitability

The **turnover** of the broad construction sector in Denmark has been increasing since 2010. It reached EUR 68.4 billion in 2017, representing a growth of 54.2% over the period 2010-2017. It then further increased to EUR 73.9 billion in

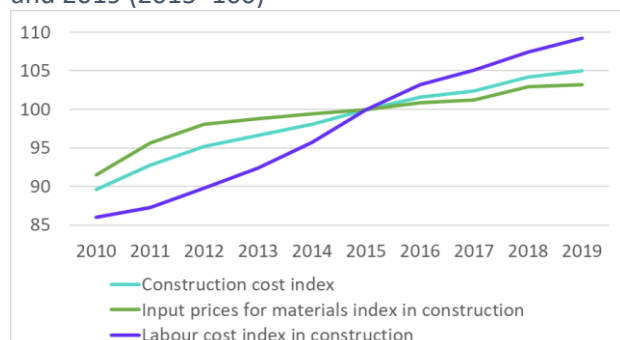
2019¹⁶, a 66.7% above the 2010 levels and 8.0% above 2017 numbers. In 2019, more than half (52.7%) of the total turnover was generated by the narrow construction sub-sector, followed by real estate (27.2%), architectural and engineering activities (12.0%) and manufacturing (8.2%) sub-sectors.

The **gross operating surplus** of the broad construction sector amounted to EUR 14.0 billion in 2017¹⁷, a 68.3% increase from 2010. The real estate activities sub-sector contributed the highest share (71.4%) in the gross operating surplus of the broad construction sector. Overall, the manufacturing sub-sector experienced the highest growth over the period 2010-2017 (145.9%).

The Danish construction sector enjoyed a high profitability in 2017. The **gross operating rate** of the broad construction sector¹⁸, which gives an indication of the sector's profitability, stood at 20.5% in 2017, 1.7 pps higher than in 2010, and higher than the EU-27's 2017¹⁹ average of 16.6%.

In parallel, construction costs for residential buildings followed the same trends, with the **construction cost index** rising by 5.0% over 2015-2019, mainly due to the 9.2% increase in indexed labour costs for the period 2015-2019. In contrast, the indexed input prices for materials grew by 3.2% over the same period (Figure 5).

Figure 5: Construction cost index between 2010 and 2019 (2015=100)



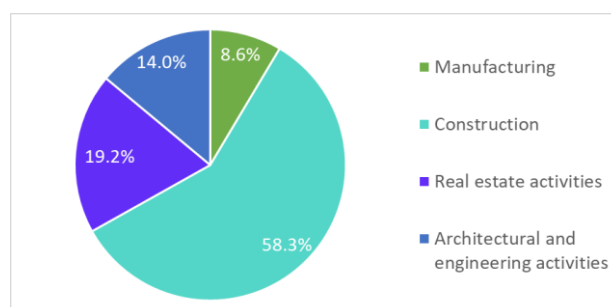
Source: Eurostat, 2020.

Employment

In 2019, there were 325,209²⁰ **persons employed** in the broad construction sector, representing a growth of 25.9% since the 2010 levels and a 2.9% increment since 2018. The narrow construction sub-sector employed 58.3% of the total construction workforce in 2019, followed by the real estate activities (19.2%), architectural and engineering activities (14.0%) and manufacturing (8.6%) sub-sectors (Figure 6).

Employment in architectural and engineering activities experienced the highest growth, increasing by 32.1% from 34,342 persons in 2010 to 45,371 in 2019. The number of persons employed in the narrow construction sub-sector saw an increase of 28.3% from 147,747 in 2010 to 189,626 in 2019. The growth in manufacturing sub-sector stood at 19.7%, up from 23,241 people in 2010 to 27,826 in 2019, whereas the real estate activities sub-sector rose by 17.6%, from 53,072 in 2010 to 62,386 in 2019.

Figure 6: Percentage of people employed by construction sub-sectors in Denmark in 2019



Source: Eurostat, 2020.

In addition, the number of **self-employed workers** in the narrow construction sub-sector declined from 29,800 in 2010 to 26,900 in 2019 (-9.7%), representing 13.1% of all the self-employed workers in the general economy. The number of **full-time employees** in the narrow construction sub-sector increased by 10.3% between 2010 and 2019. As for the number of **part-time employees**, it increased by 30.3% in the same period.

On the contrary, the number of self-employed workers in real estate activities sub-sector, increased by 15.4% between 2010 and 2019, representing 1.5% of all the self-employed workers in the general economy. In parallel, the number of full-time and part time employees in real estate activities sub-sector increased by 50.7% and 55.4% respectively over the period 2010-2019. As for the manufacturing sub-sector, the number of full-time and part-time employees decreased by 5.7% and 14.4% respectively in the same period.

In 2018²¹, the regions of *Hovedstaden*, *Midtjylland* and *Syddanmark* together accounted for 74.5% and 80.4% of the total employment in the narrow construction sub-sector and real estate activities sub-sectors respectively.



As for employment by specific occupations, in the narrow construction sub-sector, technicians and associate professionals grew by 270.8% over the period 2010-2019, whereas the number of plant and machine operators and assemblers declined by 24.1%.

In the manufacturing sub-sector, professionals recorded the highest growth of 33.7% over the period 2010-2019. In contrast, clerical support workers recorded the largest decline of 54.9% over the same period. Last, in the real estate activities sub-sector, clerical support workers recorded 129.2% growth over the period 2010-2019.

2

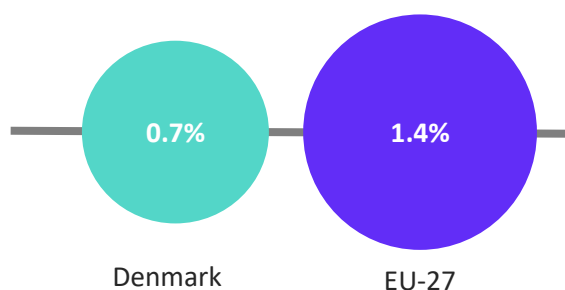
Macroeconomic indicators

Economic development

The Danish **GDP** reached DKK 2.3 trillion (EUR 302.0 billion) in 2019. This represents year over year (YoY) growth of 2.4%. The real GDP has been increasing faster than its potential growth estimates since 2013. The average GDP growth of Denmark was 1.8%, greater than EU-27's average of 1.6% for the period 2010-2019.

The **inflation rate** remained stable in comparison to 2018, standing at 0.7% in 2019. Low inflation, coupled with a rise in disposable income and employment rates, has been driving private consumption, which in turn constituted an important driver of GDP growth²².

Inflation rate in 2019



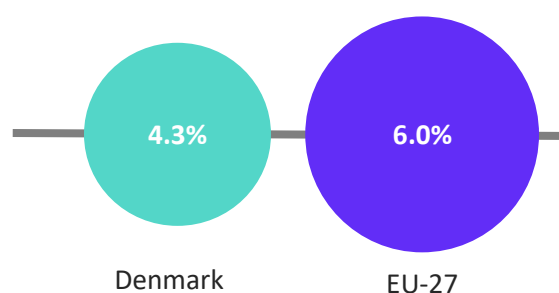
Demography and employment

In terms of demographics, Denmark's **total population** reached 5.8 million in 2019. It is projected to increase to 6.0 million by 2030 (+2.7%) and 6.1 million by 2050 (+5.0%). The **working age population** in Denmark stood at 3.7 million in 2019, accounting for 63.9% of the total population. The same is projected to decrease 3.6 million by 2050 (-3.3%). By 2050, this share will shrink to 58.9% of the total population. The population of retirement age in Denmark was 1.1 million 2019, accounting for 19.6% of the total population. This is expected to increase substantially by 19.5% in 2030, reaching 1.4 million and by 37.2% in 2050, reaching 1.6 million. By

2050, this share will increase up to 25.6% of the total Danish population. In parallel, the positive **net migration** also contributed to the population growth. The net migration stood at 18,647 in 2018²³ (10.7% increment since 2010). However, from 2015 to 2018 the net migration dropped by 55.5%. These factors may adversely affect the supply of workers in Denmark.

Denmark has a high employment rate which is primarily driven by private sector employment in the services sector. The gender employment gap is also narrow, and long-term unemployment is one of the lowest within the EU-27. In parallel, the **unemployment rate** has been declining, reaching 4.3% in 2019, below the EU-28²⁴ average of 6.0% and the lowest since the 2012 peak (6.6%). Similarly, youth unemployment (below the age of 25) stood at 10.1% in 2019, well below the EU-27 average of 15.1%.

Unemployment rate in 2019



Public finance

In 2019, general **government expenditure** in Denmark accounted for 49.6% of GDP, which represents a slight decrease from the previous year (51.0%). The same year, general **government deficit** stood at 3.7% of GDP as compared to 0.7% of the previous year. Denmark's general **government gross debt** was at 33.2% of GDP in 2019, driven by small primary surpluses. This is well below the EU average of 77.8% in 2019.

Considering other member states, the present Danish government debt is comparatively low. The debt ratio is expected to continue its declining trend in the medium term, reaching 15.4% of GDP by 2030. However, a slower pace of gross debt reduction can be felt as a result of a shift in financing model for social housing²⁵.

Last, the Danish Central Bank (*Nationalbanken*) made a slight change to the **official interest rate** in 2019. It decreased its interest rate from -0.65% in 2018 to -0.68% in 2019.

Entrepreneurship and access to finance

According to the 2019 Global Competitiveness Report, Denmark ranks 11th among 141 countries in terms of its financial system. The financial system includes domestic credit to private sector and insurance premium, which ranked 6th among 141 economies. The financing of SMEs ranked 25th, venture capital availability ranked 33rd and the rank for market capitalisation stood at 10th out of 141 economies²⁶.

As per the Global Entrepreneurship Index 2019, Denmark ranks 4th in the world and 1st in the European Union (EU-28) in terms of a healthy entrepreneurship ecosystem (out of 137 economies based on 14 pillars of assessment)²⁷.

The strongest pillars assessed with regard to entrepreneurship for Denmark relate to opportunity perception, opportunity start-up, technology absorption, human capital, competition product innovation and risk capital²⁸. Backed by a well-developed and supportive ecosystem, Danish start-ups grow and develop within a few years. With 36,400 new Danish companies being established in 2018, (the highest YoY change in comparison with previous years), Denmark can be considered suitable for entrepreneurship²⁹.

Denmark is categorised amongst the top performers in the EU-28³⁰, with regard to access to finance. Bank loans were relevant for 26.0% of SMEs (though used by 6.0% of them). The credit lines on the other side were preferred by 58.0% and were accessed by 47.0%. Leasing and equity modes of financing were pertinent to 47.0% and 17.0% of SMEs respectively, out of which 26.0% used leasing and merely 2.0% used equity³¹.

Access to finance is the most important concern for around 7.0% of SMEs in Denmark, in line with EU-28³² level³³. The performance of Denmark in access to finance is much better in comparison with other EU-28³⁴ countries. In fact, it has been the third-best performer in EU-28³⁵.

However, in comparison to 2018, the banks had been more reluctant in providing loans in 2019. The **outstanding loans to non-financial corporations** in the general economy fell from DKK 471.6 billion (EUR 63.2 billion) in 2010 to DKK 365.0 billion (EUR 49.0 billion) in 2019 (-22.6%). This risk-averse approach of financial institutions limits access to capital for companies. In addition, there is a significant gap between the cost of smaller and bigger loans, the highest in the EU-28³⁶. Despite the improvement from 11.1% in 2017 to 6.7% in 2018, the rejected loan requests lie above the EU-28³⁷ average (6.5%). In order to further improve the access to finance, two new measures were adopted by Innovation Fund Denmark (*Innovationsfonden*) in 2019³⁸;

- InnoFounder programme: Introduced in January 2019, it targets entrepreneurs having business or research experience (InnoFounder Experienced) and graduates from universities with zero experience (InnoFounder Graduate) looking to pursue an innovative business idea. The person is entitled to receive a grant of EUR 4,000 per month for 12 months and a lump sum amount of EUR 15,000 to develop ideas³⁹.

- InnoExplorer programme: Introduced in January 2019, this programme is designed to help researchers in bringing mature research or technologies developed at universities or hospitals in the market. Under this programme, Innovation Fund Denmark can financially support researchers' expenses and earnings (between EUR 70,000 and EUR 200,000 for up to a year)⁴⁰.

The survey on the SMEs' access to finance revealed the following primary needs of Danish enterprises: inventory and working capital (38%), fixed

investments (32%), developing new products or services (23%) and hiring and training workforce and talent (22%). Around 15% of the SMEs refinanced their⁴¹.

Denmark invests greatly in venture capital when measured as a share of GDP, especially in early-stage investments. Due to an increase in the venture capital investments of Danish private equity firms, the total venture and growth capital investments grew by 29.0% between 2017 and 2018, reaching the highest ever⁴².

3

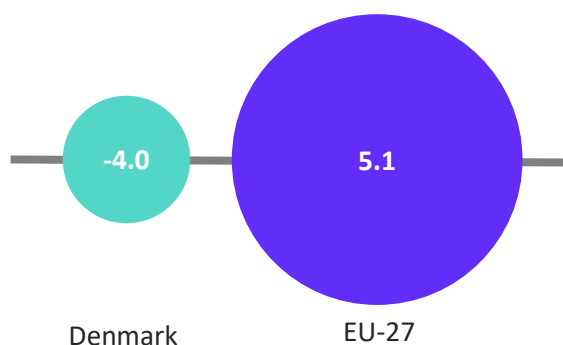
Key economic drivers of the construction sector

Business confidence

The **consumer confidence indicator** stood at 3.8 in 2019, well above the EU-27 average of -6.2. The **industry confidence indicator** reached -6.5 in 2019, below the EU-27 average of -4.8. Likewise, the **construction confidence indicator** has fluctuated in the negative territory since 2010 and reached -4.0 in 2019 (after recording a peak in 2018) below the EU-27 average of 5.1.

This is reflected in the housing, civil engineering and commercial construction sectors, which have all witnessed a slowdown in 2019. Notably, the residential construction segment, despite being strong, also witnessed a decline in price for existing houses, particularly in the urban areas⁴³.

Construction confidence indicator in 2019



Meanwhile, the **investment ratio** increased since 2010, from 18.2% to 21.8% in 2019. The investment per worker has been considerably increasing since 2013. 2017⁴⁴ recorded a value of EUR 69,546, which represents an increment of 9.8% for the 2010-2017 period.

Amidst the global pandemic, business confidence deteriorated further in the initial months of 2020. However, due to reopening of the economy after the easing of lockdown restrictions by end of May 2020, sentiments particularly in construction sector (also in services and retail sectors) improved markedly. This is expected to translate in further investment for the second half of 2020⁴⁵.

According to the Confederation of Danish Industry, the construction sector in Denmark has not yet seen the impact of COVID-19. This is due to the specifics of the sector, where the contracts for construction and related funds are agreed and allocated up to 6 months in advance. It is expected that first signs of impact on the sector will be visible during fall 2020.

Domestic sales

The ranking of the **most domestically sold construction products** in Denmark has remained constant since 2010. Among the top 5 domestically sold construction products in Denmark, “Prefabricated structural components etc. (group 236112)” experienced a growth of 214.8% for the period 2010-2018. “Ready-mixed concrete (group 236310)” grew by 83.5% over the same period. The growth for “Windows, French windows and their frames (group 162311)” was nearly negligible, as it just increased by 1.0% over 2010-2019.

The top 5 most domestically sold construction products are stated below in Table 1 representing 59.0% of total domestic construction product sales in 2018⁴⁶.

Table 1: 5 most domestically sold construction products in Denmark and in the EU in 2018⁴⁷

Y	Denmark			EU-27
	Product	Value (EUR m)	Share in construction product domestic sales (%)	Product
1	Prefabricated structural components (group 236112)	800.7	16.2	Other structures (group 251123)
2	Other structures (group 251123)	766.0	15.5	Doors, windows, etc. (group 251210)
3	Windows, French windows, etc. (group 162311)	646.6	13.1	Ready-mixed concrete (group 236310)
4	Pellets and briquettes (group 162915)	443.0	9.0	Prefabricated buildings of metal (group 251110)
5	Ready-mixed concrete (group 236310)	281.1	5.7	Prefabricated structural components (group 236112)

Source: PRODCOM, 2020.

Export of construction-related products and services

The ranking of the **most exported construction products** has also remained stable since 2010. The top 5 most exported construction products in Denmark and in the EU-27 are summarised in Table 2. Together, these made up 67.4% of all construction products exports in 2018. Amongst the top 5 most exported construction products from Denmark, “Portland cement, aluminous cement etc. (group 235112)” experienced the highest growth of 45.9% over the period 2010-2018. “Towers and lattice masts etc. (group 251122)” and “Windows, French windows and frames etc. (group 162311)” experienced decline of 26.4% and 10.0% over the period 2010-2018 respectively.

Table 2: 5 most exported construction products in Denmark and in the EU in 2018⁴⁸

	Denmark			EU-27
	Product	Value (EUR m)	Share in construction product exports (%)	Product
1	Towers and lattice masts of iron or steel (group 251122)	288.8	20.0	Ceramic tiles and flags (group 233110)
2	Other structures (group 251123)	197.2	13.5	Other structures (group 251123)
3	Windows, French windows, etc. (group 162311)	190.0	13.0	Fibreboard of wood (group 162115)
4	Portland cement, aluminous cement, etc. (group 235112)	110.7	7.6	Doors, windows and their frames etc. (group 251210)
5	Pellets and briquettes (group 162915)	108.6	7.4	Marble, travertine, alabaster (group 237011)

Source: PRODCOM, 2020.

In terms of **cross-border provision of construction services**⁴⁹, Denmark **exported** services worth EUR 8.2 billion worldwide in 2018⁵⁰, 252.5% above the 2010 value (EUR 2.3 billion). Specifically, in 2018, 81.3% of exports (EUR 6.7 billion) went to the EU-28⁵¹. This is higher 647.1% than the 2010 levels of EUR 894.4 million.

In parallel, Denmark **imported** a total of EUR 5.0 billion in construction services in 2018, a 208.1% increase since 2010 (EUR 1.6 billion), with EUR 4.7 billion from EU-28 countries (i.e. 88.0% of the total) and EUR 594.4 million from outside the EU-28. Denmark therefore achieved a **trade surplus** of EUR 3,264.4 million in 2018⁵².

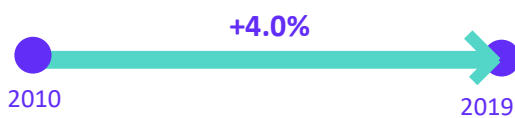
The Confederation of Danish Industry expects that exports of Danish construction products and services will be affected by COVID-19 pandemic. Although this impact was not evident in the first part of 2020 due to the implementation of already signed projects, the economic slowdown and travel restrictions will negatively affect the exports, with the first outcomes evident by the end of 2020.

Access to finance in the construction sector

In 2019, with respect to the broad construction sector, around 45% of the firms are most likely to be contented to rely on internal funds without having the need of external financing options. Around 20% construction firms report to use external source of financing in 2019. Merely 12% of construction firms have reported to invest in developing new products and services compared to all other sectors. As for investments in future, around 54% of the construction firms will prioritise replacing existing buildings, machinery, equipment and IT assets. Around 14% of the firms no have investments planned⁵³. Loans to the broad construction sector have experienced a growing trend since 2014⁵⁴, with the value of **outstanding loans** to the sector amounting to DKK 23.7 billion (EUR 3.2 billion) in 2019. This represents a 4.2% decrease compared to 2018 and a 24.8% increase since 2014, which reflects the improving confidence in the sector.

Access to housing

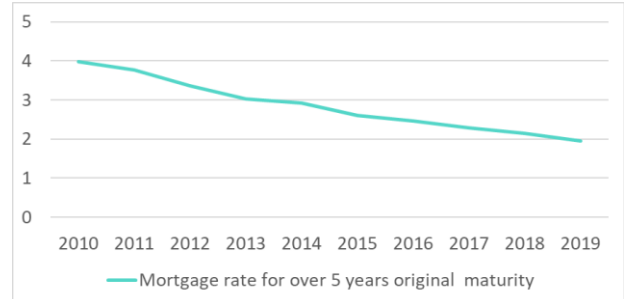
Total number of households in Denmark between 2010 and 2019



The **number of households** in Denmark has been increasing since 2010, reaching 2.4 million in 2019, representing a growth of 4.0%. Moreover, the **mean equivalised net income** stood at DKK 255,887 (EUR 34,332) in 2019, 27.7% above the 2010 level. At the same time, the share of population living in densely populated area reached 37.6% in 2019 from 33.4% in 2010. Alongside, the **interest rates on mortgages** (below

1-year maturity, 1 to 5 years maturity and maturity of 5 years and above) have been declining persistently from 2010.

Figure 7: Mortgage rates for loans for over 5 years original maturity (%) between 2010 and 2019

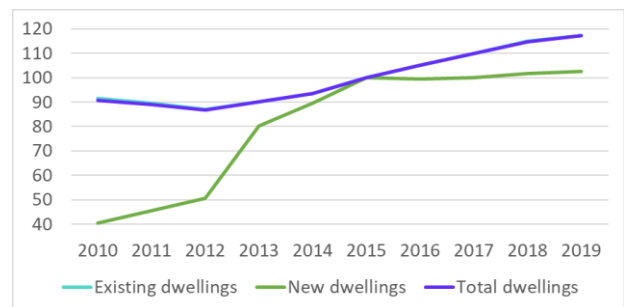


Source: ECB MFI Interest Rate Statistics, 2020.

As a result, the housing loans to households have also been increasing continuously since 2010, with **outstanding residential loans** growing from EUR 224.0 billion in 2010 to EUR 251.7 billion in 2018 (+12.4%). These factors, altogether, are stimulating the demand for dwellings.

The **house price index** (Figure 8) for dwellings surged by 17.2% above the 2015 level in 2019. Specifically, the house price index for existing dwellings reported the highest increase (17.3% since 2015) (Figure 8). The actual **rentals for housing** have also been on an increasing trend since 2010. It increased by 16 ip over the period 2010-2019, with the YoY increment in 2019 being 0.9%.

Figure 8: House price index in Denmark between 2010 and 2019 (2015=100)



Source: Eurostat, 2020.

However, the growth of housing prices slowed down 2018 onwards. This slowdown was witnessed in all regions and housing categories (existing and new dwellings). In the capital city and suburbs, the pace of price growth slowed from 4.9% in 2018 to 2.8% by the end of first half of 2019, being the lowest rate observed since the third quarter of 2012. The yearly growth of price for

owner-occupied flats, which had an average of 8.0% between mid-2012 and mid-2018, slowed from the second quarter of 2018 onwards, with prices further narrowing in the first half of 2019.

At the same time, it is important to note that the valuation of property prices continues to be on the higher side, despite i) mortgage interest rates being at their historical lows; ii) an upcoming taxation system of new property; iii) healthy construction activities in residential area and; iv) previously announced macroprudential procedures⁵⁵.

The Confederation of Danish Industry believes that the housing prices will continue to grow in Denmark, specifically in large cities. Currently the gap between the supply and demand for residential housing is too wide to be affected by temporary crisis, including COVID-19.

The number of total **building permits** issued went up from 17,097 in 2010 to 26,313 in 2019. This represents a growth of 53.9% over the period 2010-2019. The majority of the permits issued in 2019 was for multi-dwelling houses, which comprised 40.2% of the total permits issued in 2019 (10,586 permits). Terraced, linked or semi-detached house, the number of permits comprised 19.2% of the total permits in 2019, witnessing an 87.6% increment over the period 2010-2019⁵⁶.

Finally, home ownership in Denmark reached its lowest level in 2018⁵⁷ (60.5%), compared to the 2011⁵⁸ peak of 68.7%⁵⁹. Likewise, it declined from 71.9% in 2011 to 65.4% in 2018 for the population earning over 60% of the median equivalised income. The housing cost overburden rate⁶⁰ stood at 14.7%⁶¹ in 2018, above the EU-27 average of 9.6%, indicating issues around affordability. The increases in the price-to-income and price-to-rent ratios above its long-term values indicate a marginal deterioration of housing affordability over

recent years⁶². In 2019, Denmark's housing cost overburden rate stood at a further 15.6%. Conversely, the **overcrowding rate**⁶³ was at 9.2%⁶⁴ in 2018, well below the EU-27 average of 17.1%⁶⁵. The overcrowding rate for Denmark in 2019 stood at 10.0%. The **severe housing deprivation rate**⁶⁶ reached 3.2%⁶⁷ in 2018, whereas the same for EU-27 was 4.3%⁶⁸. The same for Denmark in 2019 was 2.8%.

Infrastructure

According to the 2019 Global Competitiveness Report Denmark ranked 15th out of 141 economies, in terms of its overall infrastructure quality⁶⁹.

It performed best in terms of efficiency of seaport services (ranked 6th) under transport infrastructure. Efficiency of air transport services (11th) and quality of road infrastructure (14th). On the contrary, efficiency of train services (23rd), road connectivity (36th) and airport connectivity (36th) ranked the lowest.

Investment needs are emerging for transport infrastructure, particularly due to road congestion in larger cities and the necessity of decarbonising transport sector. In the light of this, the administration has put forward strategies for electrifying the national railway network. In 2018, as per the EU Transport Scoreboard, the efficiency of train services ranked 15th among 27 EU countries. Correspondingly, in June 2018, Danish railway operator announced plans for electrifying the national railway network, with extended support from the parliament. As per the plan, new electrified trains on the national network will come into effect from 2022⁷⁰. This initiative from the government might aid in lifting up the ranks for rail indicators in the future.

4

Key issues and barriers in the construction sector

Company failure

In the narrow construction sub-sector, **company deaths** increased by 2.7% between 2012 and 2017⁷¹, while the number of **company births** went up by 11.2%. In the architectural and engineering activities, company deaths and births increased by 6.8% and 10.1% respectively during the same period. The number of company deaths and company births in the real estate activities sub-sector increased by 15.0% and 22.1% respectively over the 2012-2017⁷² period.

In comparison with other sectors, the Danish construction sector is experiencing a high level of insolvency⁷³.

Partially owing to the decreasing demand for houses in 2019 and 2020, business insolvencies are on the rise in 2019. Furthermore, in 2020, owing to the global COVID-19 pandemic, smaller businesses will likely witness additional insolvencies and large-scale established businesses will face the headwinds of decelerating economic growth, financial instability and a disrupted supply chain⁷⁴.

Trade credit

Amongst other countries in Western Europe⁷⁵, Denmark is reported as the most inclined country in extending B2B trade credit⁷⁶.

Extension of trade credit in Denmark is largely used as a method that helps building solid relationships with customers. Practised commonly in Denmark, trade credit made up 75.5% of total B2B sales in 2019 (against 61.5% last year). This share of credit sales was also greater than the 60.4% average for Western Europe⁷⁷ in 2019⁷⁸.

With the extensive use of trade credits, there are potential risks associated. Therefore, Danish

businesses manage all account receivables through diverse credit management techniques. Amongst the techniques used, 'Dunning' – outstanding invoice reminders appears to be used widely as a technique. Around 32% of businesses use this in Denmark, being greater than the Western Europe average (28%)⁷⁹.

As a result, for transactions made on credit, 78.2% of invoices were paid on time, showing an improvement from 71.7% last year. This denotes that Danish businesses turn outstanding invoices into cash earlier (on an average within 37 days from invoicing) than last year (39 days). To secure the cash flow and minimise financing costs arising out of credit sales, around 41.0% of businesses in Denmark intend to increase buyer's risk. The share of this incident in Western Europe⁸⁰ is 31.0%⁸¹.

Late payment



Denmark is considered to be the least impacted nation in terms of late payments in Western Europe⁸² – even though measures designed to protect SMEs from late payments are missing⁸³.

The payment duration in Denmark has deteriorated in 2019. On an average, accomplishing the payment took 27 days from the date of invoicing, up from 23 days last year. This is however better than the average of Western Europe⁸⁴ (34 days). In addition, around 20.3% of the total value of B2B invoices issued by Danish businesses over the past year remained unpaid at the due date. However, around 59.0% of Danish businesses reported no significant impact, in comparison to the 42.0% Western Europe average. Danish businesses appear to have improved in

terms of collection of long-term overdue invoices, in comparison to 2018. Likewise, the share of write-off for uncollectable decreased from 1.8% last year to 1.1% in 2019. The same metric for Western Europe stood at 2.2%⁸⁵.

With reference to the Danish construction sector, the share of B2B receivables written off as uncollectable is the highest (in comparison to the other economic sectors). This reflects the sector's (comparatively) poor late payment record⁸⁶.

In order to further ease the impact of late payment on businesses, around 38% of Danish businesses, plan to diversify their buyer portfolio, thereby reducing reliance on a single buyer. Moreover, 37% of Danish businesses, above the 27% in Western Europe⁸⁷, plan to offer B2B customers discounts for early settlement of accounts more frequently⁸⁸.

Time and cost of obtaining building permits and licences

According to the World Bank's Doing Business 2020 Report, Denmark ranks 4th with respect to "Dealing with construction permits"⁸⁹. In order to facilitate the comparison between permit procedures across economies, the example of building a warehouse has been used. Completing the formalities to build a warehouse⁹⁰ requires only seven administrative procedures (considerably lower than the OECD high-income average of 12.7) and takes 64 days compared to the 152.3 OECD average (Table 3). The average cost is below OECD high-income average of 1.5%, as it represents 0.6% of the warehouse value.

Table 3: Construction procedures timing and costs in Denmark

Procedure	Time to complete	Associated costs
Request and obtain building permit from the Municipality	21 days	no charge
Obtain foundation permit from Municipality	15 days	no charge
Notify the Centre for Construction of commencement of work	0.5 days	no charge
Receive construction inspection from the Supervising Authorities	1 day	no charge
Send notice of completion to the Centre for Construction	0.5 days	no charge
Receive final inspection and obtain occupancy permit	21days	no charge
Request and obtain connection to water and sewage	5 days	DKK 133,994 (EUR 17,953)

Source: Doing Business overview for Denmark, World Bank, 2020.


Skills shortage



Denmark continues to face shortage of skilled workers, specifically in certain sectors, like construction, agriculture and services. The participation rate in vocational education and training, which helps meet labour market needs, is still low⁹¹.

The number of **job vacancies** in the narrow construction sub-sector has increased significantly in Denmark over the 2010-2019 period. In 2019, job vacancies reached 3,947 in the narrow construction sub-sector (against 1,268 in 2010) and 542 in the real estate sub-sector (against 382 in 2010), an increase of 211.4% and 41.8% respectively. In addition, the construction sector is predicted to experience a significant future job growth until 2030⁹².

Job vacancies in narrow construction sub-sector between 2010 and 2019

 **211.4%**

The broad construction sector has experienced a strong growth in employment. There has also been a growth in wage in 2018 by 2.1% in the broad construction sector. Despite these increments, construction companies report a lack of workers. According to Agency for Labour Market and Recruitment, in 2019, out of the total recruitments in the broad construction sector, 32% were reported to be unsuccessful. Amid a general lack in skilled workers in the economy, there has been a growth in the labour force. This growth is driven by inflows of foreign workers, as well as older workers staying longer on the labour market to avail pension reform related increases in the retirement age⁹³.

The number of tertiary students in engineering, manufacturing and construction increased to 9,795 in 2018, representing an increase of 63.3% since 2010. The **adult participation in education and training** in the narrow construction sub-sector reached its peak in 2014 (29.2%). After some fluctuations, it increased in 2019, reaching 24.3%. Similarly, the adult participation in training for the real estate sub-sector, which stood well above 30% until 2017, fluctuated and reached 26.2% in 2019. Furthermore, the **number of students enrolled in tertiary education** in engineering, manufacturing and construction, grew substantially by 63.3% since 2010, reaching 9,795 in 2018. Specifically, tertiary students in engineering and engineering trades increased by 114.7% from 2,655 to 5,700 over the same period.

Denmark's higher education provides weak growth in employability compared to Vocational Education and Training (VET). Therefore, supply of VET graduates is vital to meet labour market requirements. In November 2018, the Danish government, decided to raise the investments in the vocational education and training (VET) system by DKK 2.3 billion (EUR 310 million) over the period 2019-2023⁹⁴. There has been a slight increase in participation of youth in VET programme directly after compulsory school, from 19.4% in 2018 to 20.1% in 2019. However, this remains significantly below the government's 2025 target of 30%⁹⁵.

Moreover, Denmark's former government had included few initiatives in the political agreement on VET. These initiatives, having come to force in August 2019, aimed at giving skilled professionals more and better opportunities to enter higher education⁹⁶. Besides, the Danish government has greatly emphasised in ensuring that more young people choose an appropriate upper secondary education to begin with. An apprenticeship or a diploma from a vocational academy is one of the safest ways to get a permanent employment. In the light of this, the government, in spring 2020 had agreed on the National Guidance Institution (*Studievalg Danmark*) guiding students on VET as well. Prior to this it was offering guidance for higher education only. A fund amounting to DKK 5.0 million (EUR 670,000) have been allocated to support this⁹⁷.

To address the impact of the outbreak of COVID-19 the Danish government put forward several initiatives to safeguard the labour and skills sector⁹⁸.

- **Working time distribution becoming more flexible:** Distribution of working time scheme is intended to make it possible to temporarily lessen the working time according to the collective agreement, thereby avoiding dismissal of the affected employees, for example, during times of declining orders⁹⁹.
- **Salary/wage payment to remain normal:** The Danish government concluded a tripartite agreement on an employee package which aims at protecting Danish jobs and ensuring normal wage payment of employees¹⁰⁰.

Temporary wage compensation for private sector employees: The government and the social partners have settled on a tripartite agreement on a temporary wage compensation system for personnel who are at a risk of being laid off. The agreement is a major contribution to ensuring that COVID-19 has the smallest possible impact on the work and livelihood of the people¹⁰¹.

In order to cater the skills shortages in Denmark, in October 2019, the government had made a broad political agreement on upskilling. As per the

agreement a funding of DKK 102.0 million (EUR 13.7 million) shall be received for six initiatives, contributing to six initiatives to upskill the labour force until 2020. Around DKK 27.0 million (EUR 3.6 million) had been allocated for helping unemployed persons complete the first part of a VET-programme¹⁰².

The Government intends to create a new type of reform called 'second generation reforms.' These reforms will emphasise on investing in the Danish welfare model through investments in education, upskilling and new Danish jobs¹⁰³.

Sector and sub-sector specific issues

Material efficiency and waste management

As per the Association of Consulting Engineers, the construction sector produced 35% of total waste in 2017. The government focuses on reusing materials and putting stringent requirements for material specifications. It intends to recycle waste volumes at large and optimise resource utilisation better, specifically because the government plans to update the existing building stock by 2035¹⁰⁴.

In terms of municipal wastes generated in 2018¹⁰⁵, Denmark was the highest among the EU-28¹⁰⁶, with 766 kg of waste per person being generated¹⁰⁷. In terms of per capita waste generated, Denmark recorded 814 kg in 2018¹⁰⁸. Notwithstanding some initiatives on waste prevention, particularly related to food waste, Denmark's municipal waste generation per capita is still the highest in the OECD. Most of this waste was incinerated (destroyed by burning) with energy recovery¹⁰⁹. As for the building and construction sector, the waste generated accounts for more than one-third of the total waste generated in Denmark. The country has improved the recycling of household waste. It further aims to add value to construction waste such as reusing bricks in construction, instead of crushing them, for using them as road materials¹¹⁰.

Denmark's total waste generation rose by 30.0% between 2010 and 2016¹¹¹, to about 20.0 million tonnes. This increase mirrors a rise in **construction and demolition waste (CDW)** as well. The CDW accounted for about 60.0% (4.3 million tonnes) of total waste produced in 2016 and recovered 87.0% of the total CDW. As a result, Denmark's construction and demolition waste management is among best OECD practices. Moreover, almost half of domestic national material consumption comprises of non-metallic minerals, including stone, gravel and sand extracted for construction activities. This turns CDW a vital sector for transitioning to a circular economy¹¹².

CDW is regulated by the following legislation: the Environmental Protection Act no. 879 26/06/2010; the Statutory Order no. 1309/2012 on waste, the Statutory Order no. 1662/2010 on recycling of residual products and soil in building and construction work, and on the recycling of sorted, unpolluted CDW; and the Circular of 15 July 1985 on the use of crushed asphalt in road construction¹¹³.

Climate and energy

Emissions of greenhouse gases (carbon dioxide, methane and nitrous oxides) from activities in the narrow construction and real estate sub-sectors amounted to 1,661,060 tonnes and 119,565 tonnes in 2018¹¹⁴ respectively. Emissions of greenhouse gases decreased by 8.5% from the real estate activities sub-sector but increased by 11.1% from the narrow construction sub-sector, compared to the 2010 levels.

In the National Energy and Climate Plan (NECP) submitted in December 2019, Denmark estimated that accumulated public and private investment needs for achievement of greenhouse gas reduction target of 2030 (reduction, would amount to DKK 100-180 billion (EUR 13.4-24.2 billion) for the period of 2018-2030, or approximately DKK 10 billion (EUR 13.4 billion) annually (around 0.4% of GDP)¹¹⁵.

5

Innovation in the construction sector

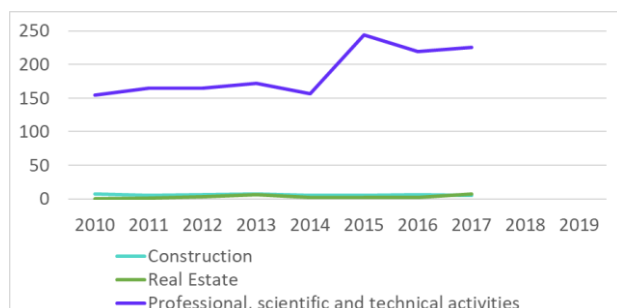
Innovation performance

Denmark is considered an Innovation Leader based on its performance in terms of innovation and R&D expenditure, according to the European Innovation Scoreboard 2020¹¹⁶.

Denmark's areas of strength, under the innovation performance, include innovation-friendly environment, attractive research systems and human resource base. Conversely, the country's relatively weak areas relate to sales impacts and relatively small number of innovators such as large firms and foundations¹¹⁷.

Business enterprise R&D expenditure (BERD) in the construction sector has shown a generally declining trend since 2010 except for professional, scientific and technical activities (Figure 9). Professional, scientific and technical activities, which reported the highest BERD, experienced a 46.4% increase from EUR 154.2 million in 2010 to EUR 225.7 million in 2017. Likewise, the BERD in the real estate activities sub-sector, which was negligible in 2010, increased to EUR 7.7 million in 2017. Conversely, BERD in the narrow construction sub-sector declined from EUR 7.5 million to EUR 4.8 million over 2010-2017 (-35.1%).

Figure 9: Business enterprise R&D expenditure (BERD) per construction sub-sector in Denmark between 2010 and 2019 (EUR m)



Source: Eurostat, 2020.

In line with the trend for BERD, the total **R&D personnel** (full-time equivalents – FTE¹¹⁸) in the professional, scientific and technical activities went up from 1,479 in 2010 to 1,541 in 2017 (+4.2%), after experiencing a decline of 23.5% in 2016 over 2015. Likewise, the number of FTEs in the real estate activities that were negligible in 2010 increased to 76 in 2017. Last, the narrow construction sub-sector experienced a 19.6% growth, from 46 in 2010 to 55 in 2017.

In parallel, the number of yearly **construction-related patent applications** has been increasing at an average of 60.6 over 2010-2019, with 2019 recording 70. Last, only one Danish Construction & Materials firm was ranked within the top 1,000 EU companies for R&D in 2018¹¹⁹.

Eco-innovation and digitalisation

Denmark has made its way to the circular economy by promoting eco-innovation, clean production, eco-design and sustainable consumption. With its patents having the upmost level of specialisation in environmental technology among OECD countries, it is amongst the innovation leaders in Europe¹²⁰. Innovation networks in construction play an important role in Denmark. These include the **Innovation Network for Energy efficient and Sustainable construction (InnoBYG)**, which focuses on developing projects, knowledge sharing as well as linking relevant stakeholders such as research institutes, industry players and universities¹²¹. The network comprises over 250 members among industry, architects, engineering firms and research institutes. A similar concept exists for transport, the **Transport Innovation Network (TINV)**, which aims to bring together stakeholders to develop projects in transport and infrastructure.

The Danish Eco-Innovation Programme has funded various knowledge platforms and networks on sustainable construction in addition to technology developments for waste prevention of CDW and in the building sector¹²².

The Danish Eco-innovation Programme (*Miljøteknologisk Udviklings- og Demonstrationsprojekt- MUDP*), launched in 2015, is a subsidy scheme which supports Danish companies in developing and demonstrating new eco-efficient solutions with emphasis on sustainable construction, water, circular economy and recycling of waste, amongst others¹²³. The scheme is managed by the Danish Environmental Protection Agency (EPA). In 2014, around DKK 90.0 million (EUR 12.1 million) had been allocated for this purpose¹²⁴.

Similarly, ELFORSK is a grant managed by the Danish Energy Association to support R&D projects that ensure the efficient and flexible use of energy, focusing especially on buildings and electricity consumption in industry. The scheme has a budget of DKK 25 million (EUR 3.4 million)¹²⁵. In August 2019, ELFORSK project was selected for Sustainable Build Innovation Challenge 2019. Sustainable Build promotes sustainable construction growth in Denmark¹²⁶.

Numerous Danish stakeholder networks are actively participating in the field of sustainable construction and management of CDW. In the light of these, two such ongoing initiatives include: a network for construction waste which had been established by the Danish Waste and Resource Network as early as 2012 Sustainable Build, and an alliance between the Danish Industry Foundation and the Danish Architectural Centre for promoting sustainable architecture¹²⁷.

Currently, property developers owned by the municipality in Denmark can participate in courses on sustainable building practices. This initiative aims at establishing sustainable building practices, procedures and approaches in the municipalities. It therefore aids in minimising environmental costs and impact¹²⁸.

To address structural challenges, the Cohesion Policy programmes for Denmark have allocated EUR 203.0 million, EUR 156.0 million and EUR 41.0 million from EU funds for inclusive growth, smart growth and sustainable growth¹²⁹.

In order to boost innovation in Danish SMEs, the government introduced three new measures in 2018 and the first quarter of 2019;

- **SME:Digital**, which was introduced in September 2018, is a wide-ranging SME scheme to aid improvement of digital skills of small and medium-sized enterprises (SMEs) and support Danish e-commerce. It provides a single access point for SMEs to apply for individual advisory services which promote the use of new digital technologies and e-commerce in SMEs.
- the government also created the **SME:Board** to manage the SME:Digital scheme. It is an advisory board established to assist SMEs in digitalizing manual and paper-based procedures in production processes and administration. It was introduced in November 2018.
- the **Industrial Researcher programme** (*Erhvervsforsker*), which was set up in January 2019, invests in industrial PhD and postdoctoral research projects. Member of the programme is employed in a private company and enrolled at — or collaborates with — a public-sector research organisation. The member works on the same project at both places. Innovation Fund Denmark invests in projects from all research fields provided the research project is of high quality and is commercially relevant to the company¹³⁰.

Denmark is progressing with respect to the implementation of BIM, as it initiated programmes for the digitalisation of construction skills and is among the member states with the highest level of BIM adaptation in Europe¹³¹. In 2007, Denmark became the first country to mandate Building Information Modelling (BIM). This regulation has been mandated on Danish state clients, which instructs to adopt BIM practices for new construction and restoration projects.

Denmark, along with other EU countries are implementing (binding and non-binding) strategies

and initiatives which aims at fostering the adoption of BIM in public procurement. The country used an incremental method by requiring BIM for public sector renovation projects initially, and then for state supported social housing, before expanding it to all local and regional projects. In 2016, around 78.0% of Danish companies were mindful of BIM and used it for various purposes (3D visualisation, etc.). The Danish construction industry has been progressively impacting its developments with BIM implementation. In fact, more than 65% of companies that use BIM, expect to use it for all projects during the next five years¹³².

The Danish Construction Association (*Dansk Byggeri*) implements BIM educational programme for simplifying BIM implementation across the construction companies. It offers three courses relating to BIM: 'Effective amount calculation with BIM', 'Quick and efficient quality assurance with digital tools' and 'Learn how to handle the advisor's 3D material'¹³³.

Amongst others, two significant Danish projects are New Hospital Bispebjerg in Copenhagen and the Ringsted-Fehmarn rail link project (initiated by Denmark and Germany to connect the fixed link across the Fehmarnbelt by 2021¹³⁴). Finally, according to Dansk Industri, large-size Danish companies are also starting to use **virtual design and construction (VDC)**, which is an extension of BIM and 3D technology and helps with financial calculations¹³⁵.



Since 2011, the Danish government has mandated BIM for all local and regional projects costing above EUR 2.7 million and government buildings starting from a volume of EUR 677,000¹³⁶.

6

National and regional regulatory framework

Policy schemes

In June 2018, the Danish government proposed a ‘**new housing strategy**’ consisting of four key aspects including safe housing, sustainable debt, better living environment and efficient construction processes¹³⁷.

- in the context of safe housing, the government has prepared a report to make amendments to the Disposal Act, revise the insurance scheme and establish an authorisation scheme for appraisers.
- as per the strategy, the government also wants to simplify the planning and building legislation to avoid the slow pace of housing development due to unnecessary regulations.
- with regard to the housing debt, the government has planned to continue the mortgage loan regulations to contribute to a more sustainable development of household debt.
- recently the homeowners in Denmark have also worked on establishing debt registers as well as rent restrictions through platforms such as Airbnb to ensure safe and good living environments around the country.

Denmark has entered into an agreement with 24 municipalities under the “**2018-2021 Action Plan Against Homelessness**”. This aims at providing support to the municipalities, including an assessment for identifying gaps in the present municipal approach to homelessness, advisory services for helping these municipalities execute Housing First principles, with funding for

preliminary projects. Municipalities are funded to implement an innovative approach recognised by the central government, or to implement their self-designed solution¹³⁸.

The government is also developing national guidelines with several best practices, about inputs from several stakeholders working on homelessness all over the country¹³⁹.

Social housing plays an important role in Denmark’s policies¹⁴⁰. The former Ministry of Immigration, Integration and Housing (now Ministry of Transport, Building and Housing) has set up various **subsidies for social housing**.

An initiative named “Denmark without parallel societies – no ghettos by 2030”, has come into effect since December 2018. It aims at breaking up neighbourhoods characterised as “ghettos” and wiping up these by 2030. The “ghetto” plan’s key agenda is to implement higher sanctions for committing crimes within these neighbourhoods. An upper limit of 40.0% social housing has also been introduced¹⁴¹.

The Ministry also offers developers and housing associations subsidies for the construction of permanent dwellings, known as ‘alternative homes’ (*skæve boliger*), for the homeless and other disadvantaged beneficiaries. Support amounts to up to DKK 400,000 (EUR 54,000) per housing unit¹⁴².

In 2020, the Danish government initiated a law which releases municipalities from the agreed construction ceiling of DKK 19.1 billion (EUR 2.6 billion). This has been agreed between Danish government and local government. Additionally, the government will release the regions from the

construction ceiling (DKK 2.5 billion) agreed upon with the Danish Regions¹⁴³.

Denmark is also investing in **urban renewal** initiatives, seeking to boost the development and transformation of more deprived urban areas to improve their attractiveness and the living standard of the population. This includes the regeneration of the housing stock, municipal infrastructure and social spaces. To this end, DKK 136.1 million (EUR 18.3 million) has been allocated to urban renewal in 2017, DKK 65 million (EUR 8.7 million) both for 2018 and 2019 and DKK 82 million (EUR 11.0 million) for 2020¹⁴⁴.

Furthermore, the two urban regions of Denmark, Copenhagen and Aarhus, have set smart city targets. Copenhagen, with an aim to be the world's first carbon-neutral city, is implementing innovative solutions for water and heating supplies, transportation, waste management and alternative energy sources¹⁴⁵. The country, as a whole, also aims to become carbon neutral by 2050¹⁴⁶. While Aarhus is creating a digitalisation strategy in collaboration with its citizens, academia, private companies and public authorities¹⁴⁷. Moreover, the Danish city of Aalborg and Tumakuru Smart City Ltd. signed a memorandum of understanding to improve city's infrastructure under a smart city initiative. Cities will cooperate in the field of smart education, energy efficiency initiative, transportation, urban water management, digitisation, technology for the construction of green buildings, waste management to attain healthy and liveable cities, e-governance and health¹⁴⁸.



The Danish government has proposed the allocation of DKK 30.0 billion (EUR 4.0 billion) from the National Building Fund (*Landsbyggefonden*) for green renovations in the social housing sector during 2020-2026¹⁴⁹.

This will be the first step towards a green recovery of Denmark. Out of the total allocation, DKK 18.4 billion (EUR 2.4 billion) will be used for renovating 72,000-social housing. With a focus on the green transition, the remaining DKK 11.6 billion (EUR 1.5 billion) will be used for to serve upcoming renovations till 2026¹⁵⁰.

Policy measures to offset potential risks related to the low mortgage rates and house price increases have also been adopted¹⁵¹. The Danish Financial Stability Authority (*Finanstilsynet*) introduced the '**Supervisory Diamond for Mortgage Credit Institutions (MCIs)**'. It is built on five indicators containing the limits on the risk of the institutions¹⁵² for securing the stability of the mortgage market. The indicators include the share of loans without amortization, the interest-rate risk of the borrower and lending growth. In 2017, an agreement on a new housing tax system was signed, which implies that housing taxation from 2021 follows new and more accurate property and land assessments¹⁵³.

Building regulations

Construction activity in Denmark is regulated by the **Building Regulations 2018 (BR18)**, which replaced the BR15 in January 2018. These dictate the rules for the construction of both private and commercial buildings, providing both the legally binding requirements (regarding e.g. building interiors, fire behaviour, energy consumption, installations, etc.) as well as comments and guidelines to such requirements¹⁵⁴.

The **Building Act (*Byggeloven*)** together with voluntary agreements shape construction activities. The Building Act sets the framework ensuring that buildings are designed and constructed in such a way that they provide satisfactory security against fire, as well as meeting health and safety standards. Voluntary agreements define the relationship between construction parties. Namely, AB 92 defines contractual arrangements between construction professionals, AB 93 applies to turnkey contracts whereas AB Forbruger is used in contracts between a building company and a private client¹⁵⁵.

Amendments to the Building Act were passed by the Parliament in April 2016 and became effective as of July 2016¹⁵⁶. The amended Act will make buildings in Denmark cheaper and easier through several changes, including:

- the introduction of a certification scheme for the documentation of the technical aspects of complex constructions (e.g. multi-storey buildings) removes the need for municipalities to assess compliance with the technical conditions stated in the

building regulations, thus speeding up the issuing of construction permits;

- the exemption of rental properties from building insurance requirement will make it less expensive for developers to build rental properties;
- the two fire legislations on the design and operation of buildings are merged in the Act and simplified, thus alleviating some of the administrative burden of obtaining building permits.

The amendments to the Building Act also entail a general requirement for the installation in buildings of heating based on renewable energy¹⁵⁷.

The Building Regulations (BR18) is in force and the energy requirements are mostly the same as in BR15, but the building class 2020 has become voluntary rather than statutory after 2020. It is considered in the regulations as a low energy class¹⁵⁸.

BR18 is accompanied by a draft 'Executive Order on the certification scheme for documentation of technical conditions in the building regulations'. The main changes expected with the BR18 concern the structure of the building regulations. The Executive Order defines the requirements related to the certification scheme introduced by the 2016 amendments of the Building Act. According to the Association of Building Experts, Managers and Surveyors, however, this new certification scheme

is likely to harm small construction companies, as they will be required to pay for a professional service that previously was provided by the municipalities.

Insurance and liability related regulations

In Denmark, property developers are required to take out compulsory building insurance, which is valid for 10 years and covers major building defects¹⁵⁹. This requirement is governed by the **Building Insurance Ordinance** (*Bekendtgørelse om byggeskadeforsikring*) and seeks to strengthen the consumer's legal position by providing access to damage repair or compensation from the insurance company in case of serious damage in a newly established residential unit¹⁶⁰. Disputes between parties in construction contracts are settled by arbitration in the **Danish Building and Construction Arbitration Board** (*Voldgiftsnævnet for Bygge- og Anlægsvirksomhed*)¹⁶¹.

In addition, under the general conditions in the standard construction contracts, AB 92 and ABT 93, the employer has to take out and pay for the usual fire and storm and tempest insurance from the commencement of the construction work until any defects identified at handing-over of the construction have been rectified. A public employer is not obliged to take out this insurance as he/she can be considered as a self-insurer¹⁶².

Current status and national strategies to meet Construction 2020 objectives

TO 1 – Investment conditions and volumes

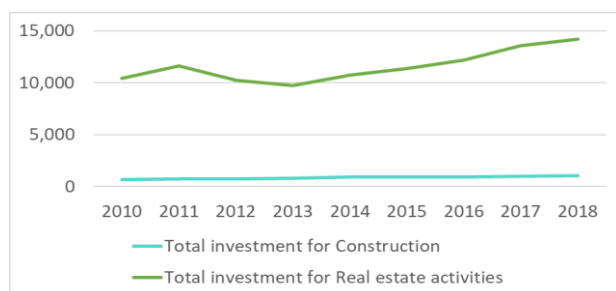
Total investment by the broad construction sector¹⁶³ has been fluctuating between 2010 and 2018¹⁶⁴ (Figure 10).



The total investment by the narrow construction sub-sector reached EUR 1.0 billion in 2018¹⁶⁵, an increase of 57.6% over the 2010-2018 period.

The total investment by the real estate activities sub-sector went up by 36.5% from EUR 10.4 billion in 2010 to EUR 14.2 billion in 2018.

Figure 10: Investment in the Danish broad construction industry between 2010 and 2018 (EUR m)



Source: Eurostat, 2020.

Investment in the narrow construction between 2010 and 2018



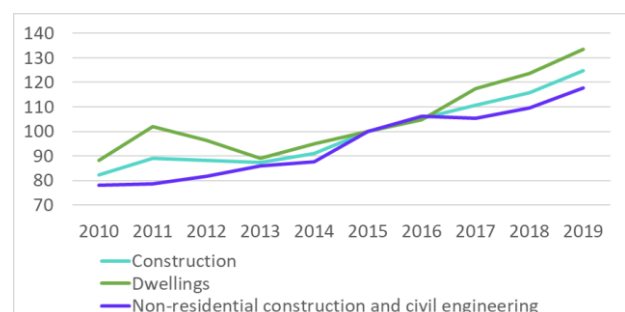
57.6%

Total investment in construction¹⁶⁶ has been increasing growing by 24.8% between 2015 and 2019 (Figure 11). In particular, investment in dwellings by the whole economy increased by

33.5% over 2015-2019, whereas investment in non-residential construction and civil engineering grew by 17.8% over the same period. In absolute terms, investment in the construction sector totalled EUR 31.0 billion in 2018¹⁶⁷, of which EUR 14.8 billion was invested in dwellings and EUR 16.2 billion in other buildings and structures¹⁶⁸.

According to the Confederation of Danish Industry, the public recovery package addressing COVID-19 impact will include additional measures to boost social housing, specifically in the larger cities in Denmark.

Figure 11: Investment index in the Danish construction sector between 2010 and 2019 (2015=100)



Source: AMECO, 2020.

Total inland infrastructure¹⁶⁹ investment as a share of GDP has been fluctuating since 2010. From 0.5% in 2010, it reached 0.8% in 2016¹⁷⁰. Investment in rail infrastructure surged from EUR 396.4 million in 2010 to EUR 1.2 billion in 2016 (+199.0%). Similarly, investment in road infrastructure increased from EUR 936.6 million in 2010 to EUR 1.1 billion in 2016 (+17.4%). Meanwhile, investment in road infrastructure maintenance declined from EUR 1.1 billion in 2010 to EUR 919.8 million in 2016, a decrease of 13.1% over the period 2010-2016¹⁷¹.

Household renovation spending has seen an increasing trend since 2015. It grew from EUR 874.0 million in 2010 to EUR 1.2 billion in 2018¹⁷² (+39.7%), accounting for 0.8% of household disposable income, compared to 0.7% in 2010 and slightly lower than the EU-27 average of 0.9%.

In the EU Mobility and Transport report, investments in Denmark's infrastructure has been greater than EU-28¹⁷³ in most of the indicators such as efficiency of air/seaport/train services, quality of roads, completion of TEN-T road core network¹⁷⁴. Since 2008, the investments in road infrastructure has progressively increased to a level comparable with the EU-28 average. However, road congestion predominantly around bigger cities continue to increase¹⁷⁵. The country has taken measures to emphasise the investment-related economic policy on education and skills as well. The 2020 Budget has allocated a significant increase in public expenditure on primary schools¹⁷⁶.

In October 2019, the Danish government announced its plan of negotiating an agreement on infrastructure investments. A part of this plan is supposed to ease out road congestions through investments in public transport and cycling. As a part of country's strategy of decarbonising, investment in the transport infrastructure is also required. The Government has also taken action to publicise European Rail Traffic Management System (ERTMS) signalling on Danish railroads. This is a criterion for further electrification of the rail network. New electric trains for regional and international traffic to Germany is projected to be functioning from 2021¹⁷⁷.

Denmark has been allocated EUR 810.0 million in the current Multiannual Financial Framework, from the EU Cohesion policy funds. By the end of 2019, around EUR 749.0 million had been allocated to specific projects¹⁷⁸.

Over the next ten years, Greater Copenhagen will see several vast public infrastructure investments, including the construction of five major hospitals and¹⁷⁹. The total financing as of June 2020, under the European Fund for Strategic Investments (EFSI) in Denmark, totals EUR 1.2 billion and is ready to trigger EUR 6.3 billion in additional investments. With regard to infrastructure and innovation in Denmark, around 20 approved projects have been

financed by the European Investment Bank (EIB) with a support from EFSI. This requires EUR 652.0 million in total financing and is set to trigger EUR 4.6 billion in total investment.

Amongst these infrastructure projects, are the Ring 3 light railway around Copenhagen with a budget of EUR 0.5 billion and the new Eastern Bypass harbour tunnel with a budget of EUR 1.2 billion¹⁸⁰. The Ring 3 light railway services is expected to open to public by 2020¹⁸¹.

The Ring 3 light railway project is estimated to create 7,000 direct and indirect full-time employment during construction and 250 permanent jobs upon commissioning¹⁸².

Denmark is also investing over DKK 40.0 billion (EUR 6.8 billion) in the construction and renovation of healthcare facilities across the country until 2022. The investment covers 16 projects, of which 4 are entirely new constructions¹⁸³. Apart from these with respect to infrastructure, an upcoming project is the **Fehmarn Belt Tunnel** project which is planned to start on January 2021. With a EUR 7.4 billion budget partly financed by EU Funds, it will be connecting tunnel between Denmark and Germany, aiming to reduce the travel time¹⁸⁴.

According to the Confederation of Danish Industry, COVID-19 so far had a limited impact on the construction sector (August 2020). The survey done by the Confederation shows that construction companies do not expect major downturn in 2020-2021, as most of projects for this period have been already planned and financed. Looking forward, some project in mid-term perspective might be delayed, however, specific impact of COVID-19 on the sector could be assessed closer to the end of 2020.

TO 2 – Skills

The participation in **vocational education and training (VET)** should be promoted to reduce the scarcity of skills in the country. In fact, the dropout rates need to be reduced¹⁸⁵. Denmark's policy as set by the Director General for Vocational Education and Training for 2016-2020 prioritises to increase the share of young people choosing VET to 25% by 2020. It also aims at increasing the share of students completing VET to 60.0% by 2020¹⁸⁶. The employment rate amongst recent VET graduates in 2018 had increased to 85.6% from

2017 (82.8%). The rate still lies above the EU-28¹⁸⁷ average of 79.5%. The employment rate of recent graduates also recovered to 87.8% in 2018¹⁸⁸.

The Agency for Labour Market and Recruitment, 2019 reported Denmark's total number of unsuccessful recruitments at 61,110 in December 2019. This represented 20% of total recruitments, below the February 2019 level (22%). In particular, the construction sector reported 32% of total unsuccessful recruitments in December 2019¹⁸⁹.

In November 2018, the government approved a DKK 2.3 billion (EUR 308.0 million) initiative aimed at increasing learners' awareness of and motivation for VET programmes from a primary age. It emphasised on practical skills in lower secondary schools, with compulsory VET-related subjects and assessments. It also encompasses stronger involvement of municipalities in guidance and counselling¹⁹⁰.

'STEM - the way to business competence and employment' is a project rolled out in interest of attracting more young people to opt for education in the digital or technical fields. Targeted guidance for pupils with their parents, practice-oriented teaching and internships are some of the key activities in the project¹⁹¹.

The project is receiving DKK 43.0 million (EUR 5.8 million) from the European Social Fund and spans from 1 January 2019 to 31 December 2021. Around 800 internships are expected to be created from this project and 7,800 people are expected to participate. Simultaneously, special VET classes and extension courses for talents within the STEM areas are being established. The project also aims to incentivise female students to acquire STEM proficiencies. Unemployed adults will also get an opportunity to enhance their vocational skills, helping them transform from unskilled to skilled workers¹⁹².

The recent reforms in Denmark have made higher education all the more flexible, linking it more closely to labour market needs. As per a contract from December 2018, 25 one-year full-time professionally oriented master courses had been introduced to allow improved prospects for students to combine study and work and be able to gather work experience between degrees. In 2019, the government had also allocated DKK 190

million (EUR 25.5 million) to a talent track which aimed at supporting 5,000 students¹⁹³.

To attract young people in the construction sector, a series of initiatives were introduced. The Trade Union 3F and the Danish Construction Association launched **Build the Future** (*Byg fremtiden*), a website where young people can read about the 16 vocational education programmes in construction and the experiences of current apprentices, and thereby be inspired in their educational choices. The website also contains information about career opportunities and the possibilities of higher education within the sector¹⁹⁴.

Build a House (*Byg et hus*) is a 4-year educational project for 3rd to 6th grade pupils (9-12 years) offered in collaboration between the Technical School of Esbjerg and Esbjerg Municipality. During the four school years, the students build a house in size 1:20, in cooperation with a partner vocational school.

Therefore, they learn about different aspects of building a house, including electrical work, construction, roofing, architecture, decoration, materials, crafts, house loans, etc. The goal of the initiative is to introduce the pupils to education and professions in the building sector and familiarise them with the vocational school¹⁹⁵.

In November 2018, the Danish government proposed 55 initiatives involving *Folkeskolen* and the VET programmes to make VET programmes more attractive to young people. The government has proposed to support the initiatives with DKK 2.0 billion (EUR 270.0 million) over four years (2019-2022)¹⁹⁶.

Finally, for simplifying the recognition of skills, the **competency card** initiative (*uddannelseskortet*) was introduced by the Trade Union 3F and the Danish Construction Association¹⁹⁷. However, the lack of EU-wide recognition of skills, as well as differing curricula in construction-related studies still pose a challenge for cross-border activity, according to the Danish Association of Building Experts, Managers and Surveyors.

TO 3 – Resource efficiency / Sustainable construction

The Danish Eco-Innovation Programme has funded numerous knowledge platforms and networks on sustainable construction. Several Danish stakeholder networks are also active in the area of sustainable construction. One such initiative is 'Sustainable Build'. It is an alliance between the Danish Industry Foundation and the Danish Architectural Centre to promote sustainable architecture¹⁹⁸.

Sustainable construction is a growing focus in Denmark. The target of achieving a reduction in greenhouse gases by 70% till 2030, will fetch opportunities to restructure the Danish economy and prepare it for the global transition to a low carbon society¹⁹⁹. Presently, Copenhagen has an abundance of "green building" structures with sustainability as an essential component²⁰⁰. Several governmental incentives and favourable framework conditions are in place to support green innovation. At the same time, the public sector regulations demand increasingly sustainable solutions in all future construction and renovation projects. In addition, the national government passed ambitious energy agreements, with the aim to invest DKK 60 million in energy efficiency initiatives over the period of 2012-2020²⁰¹.

In addition, the Danish government's strategy for energy efficiency and renovation of the existing building stock, named '**The road to energy-efficient buildings in the Denmark of the future**' (*Vejen til energieffektive bygninger i fremtidens Danmark*). It consists of 21 initiatives to support renovation, in compliance with the Energy Efficiency Directive and Energy Performance of Buildings Directive. The initiatives aim to reduce net energy consumption for heating and hot water in existing buildings by 35% by 2050²⁰².

A mandatory initiative in Denmark is the **Energy-labelling of buildings**. It aims to promote energy savings by visualising the amount of energy that a building consumes and by outlining the energy saving possibilities²⁰³.

In addition, Denmark has also introduced the voluntary **Building class 2020** (*Bygningsklasse 2020*) in BR10, to comply with the Energy Performance of Building Directive's requirement of nearly-zero energy buildings. It reduces the energy consumption of buildings by 75% compared with the 2006 level, and was made legally binding in BR15²⁰⁴.

The **energy efficiency renovation of social housing** is supported by the National Building Fund through a budget of DKK 18.1 billion (EUR 2.4 billion) for the 2015-2020 period. Namely, DKK 2.6 billion (EUR 349.6 million) was allocated for 2017, DKK 2.5 billion (EUR 336.1 million) for 2018 and DKK 2.3 billion (EUR 309.3 million), each for 2019 and 2020. Of the total budget, DKK 350 million (EUR 47.1 million) is dedicated to energy-saving measures annually; DKK 400.0 million (EUR 53.8 million) per year to improving the accessibility of the dwellings for elderly and disabled occupants; and DKK 160.0 million per year (EUR 21.5 million) for infrastructure upgrades in vulnerable areas²⁰⁵. With regard to energy efficiency and conversion of heat supply, energy efficiency and new technology, biogas and new district heating capacity, the National Energy and Climate Plan (NECP) expects an additional investment between DKK 10 billion and DKK 30 billion (EUR 1.3-4.0 billion) until 2030²⁰⁶.

Finally, in order to incentivise households to carry out energy efficiency works, a new scheme was introduced, allowing to detract some of the costs of craftsmanship services. *BoligJobordningen* entitles beneficiaries to a deduction of DKK 12,000 (EUR 1,614) per person per year for labour services for selected energy improvements and/or climate adaptation. Eligible interventions include insulation of roof, outer walls and floors, replacement of windows, installation or replacement of heating systems, installation of solar panels, as well as energy advice²⁰⁷.

According to the Danish Association of Building Experts, Managers and Surveyors, energy saving refurbishments and renovations constitute a momentous task for the Danish society until 2050, and achieving the set goals will require a considerable investment, as well as an interdisciplinary approach based on the cooperation of a large number of different professionals.

According to the Confederation of Danish Industry, the COVID-19 pandemic has had a positive impact on the number of renovation works in the first part of 2020. Linked to the lockdown, small construction contractors recorded increased activities linked to renovation in the residential sector. Moreover, the economy support package developed by the Government will be focusing on green economy, suggesting further investment into green and sustainable construction in the short and medium term.

TO 4 – Single Market



Denmark's performance regarding the transposition of EU directives such as transportation deficit, overdue directives and conformity deficit improved in 2019. It performed well with regard to the Internal Market Information Systems²⁰⁸.

Denmark reported a better performance with respect to several of the metrics of the **EU Single Market Scoreboard**, compared to last year. Denmark's performance regarding the transposition of EU directives such as transportation deficit (0.2%; EU-28²⁰⁹ average 0.6%), overdue directives (2 in 2019) and conformity deficit (1.2%; EU-28 average 1.2%) improved in 2019, compared to 2018. The number of pending cases under infringement has also improved in 2019 (21 cases) from 2018, but still lies below the EU-28 average (29 cases). Furthermore, its performance in public procurement was satisfactory in 2019. Lastly, Denmark continues to perform well with regard to the Internal Market Information Systems²¹⁰. However, the average delay for Transposition worsened in 2019 from 2018 (32.2 months; EU-28 average 11.5 months).

Denmark has a well-functioning and advanced procurement system, supervised by the Danish Competition and Consumer Authorities. However, it scores slightly below the EU-28²¹¹ average in public procurement. Denmark is considered to be amongst the world's least corrupt countries. Corrupt practices like bribery do not act as an obstacle for business²¹².

Denmark, having made progress in its performance in single market since 2008, presently stands above the EU-28²¹³ average. Companies in Denmark have a history of exporting goods and services, and the authorities have reinforced this through several schemes. The Export Credit Agency (*Eksportkreditrådet*) has played a major role in smoothing the delivery of export credit guarantees. These play a vital role in ensuring that SMEs are paid when they export goods and services, particularly to higher-risk countries.

The Danish government has taken numerous steps to build up transparency and enable better access of SMEs for public procurements. In 2019, the Danish Competition and Consumer Authority reported progresses in the total number of bids, increased proportion of flexible and innovation promoting procedures and a considerable increase in the share of EU tenders won by small-scale companies with less than 50 employees (KFST 2019)²¹⁴.

In 2019, as a part of the government strategy on 'intelligent public procurement', a national strategy on Green Public Procurement is being implemented by the Danish government²¹⁵.

As part of this strategy, the 'Partnership for Green Public Procurement' is a collective effort of 12 municipalities, two regions and other stakeholders, in order to reduce their own environmental impact from their procurement actions. This will thereby drive the market in a greener direction²¹⁶.

As for the implementation of **Eurocodes**, all Parts are published as National Standards, with 41 being obligatory for structural design and Public Procurement, as stated in the "Building regulation" (BEK Nr 810 of 28/06/2010) and in the "Load and calculation rules for track carrying bridges and earthworks and Public Roads Act". National Annexes have been published on these 41 Parts, but not on 2 Parts of EN 1991, 8 Parts of EN 1993, EN 1998, and 2 Parts of EN 1999. No other National Standards are used in parallel with the Eurocodes²¹⁷.

TO 5 – International competitiveness

Denmark ranks 10th out of 141 economies in the 2019 Global Competitiveness Report²¹⁸. Denmark is the best performer in EU-28²¹⁹ regarding internationalisation. Denmark has a set of national policies and schemes focused on export guarantees and advisory services to help SMEs to access foreign markets²²⁰.

Denmark's Trade Council (*Eksportrådet*) conducts numerous schemes for SMEs through the local business hubs and Danish embassies. Some of these services are free, particularly when SMEs just begin exporting and growing business activities into new markets²²¹.

There are several other export-oriented programmes which provide innovation services to Danish businesses and research institutions. These programmes are arranged through the **Innovation Centre Denmark**, which is a partnership between the Trade Council and the Ministry of Higher Education and Science. **'SCALEit'** is one such programme provided by the centre. It targets tech start-ups, and helps entrepreneurs in scaling up their idea abroad, making full use of the networks offered by the Innovation Centres.

A scheme conducted by Danish Trade Council, named **Export 'sparring' (*Eksportsparring*)** is aimed for small and medium-sized companies which are a novice in export market or have limited experience with exports. The programme is segregated in two tracks:

- The first track comprises export 'sparring' sessions. This is conducted by a Trade Council adviser from a regional business hub. This session prepares the company in taking up the export markets by studying internal and external factors. The company drafts an export plan in the end.
- The second track involves a free counselling session of 15 hours for export from a trade advisor from the Trade Council. This mainly consists of basic market information which boosts the company's potential to choose a market. A company can participate in counselling sessions for two different markets²²².

Another scheme run by the Danish Trade Council is the **'Strategic Business Alliances'** scheme where advisors create numerous alliances in corresponding export markets. Relevant companies are then linked to the alliances formed. This way the 'Strategic Business Alliances' scheme creates economies of scale for a company's exports and the company thus gets the advantage over exports of its opponents. From an international market standpoint, holistic solutions are more in demand than individual products, and this proves to be beneficial and advantageous for strategic alliances²²³.

The **VITUS programme** is a tailor-made one-year course run by the Danish Trade Council, which offers advice related to export. The adviser possesses an in-depth knowledge of the relevant export market supports a business in developing a marketing strategy and selecting right tools to receive orders from the selected market in the first year²²⁴.

Similarly, the GROW programme is a counselling session which promotes internationalisation by analysing the market and matching partners on the local market. It is scheduled to run for 50-200 hours²²⁵.

Despite these reforms undertaken, a decline has been observed in the internationalisation of construction companies in Denmark over recent years. The value of **exports for all construction-related** products in Denmark for 2018²²⁶ stood at EUR 1.7 billion, a decline of 9.0% over the period 2010-2018. The share of exports value of all construction-related products as a percentage of total value of production in 2018 stood at 36.3%, representing a decline of 8.6 pps over the same period.

The value added at factor cost of **Inward FATS²²⁷** for 2017²²⁸ in manufacturing sub-sector, narrow construction sub-sector and real estate activities sub-sector amounted to EUR 9,544.7 million, EUR 840.6 million and EUR 1,060.4 million respectively.

The turnover values of **Outward FATS²²⁹** for 2017²³⁰ in manufacturing sub-sector, narrow construction sub-sector and real estate activities sub-sector amounted to EUR 69,357 million, EUR 1,826 million and EUR 3,086 million respectively.

Country Fact Sheet Denmark

The **Foreign Direct investment** abroad specific to EU-27 countries in 2018²³¹ stood at EUR 24,726.5 million and for countries outside EU-27, it was EUR 13,260.8 million.

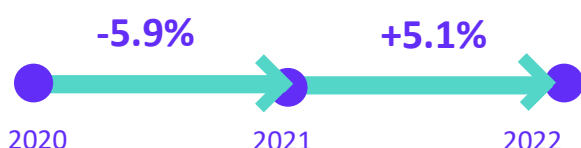
As per the Global Competitiveness Report 2019, Denmark ranked 21st out of 141 economies in terms of **Trade Openness**²³².

8

Outlook

Since 2010, the Danish economy's performance consistently improved with the economy operating above its potential till 2019. However, with the outbreak of COVID-19 pandemic in 2020 resulting in lockdown restrictions, the Danish GDP is projected to decline by 5.9% in 2020, before witnessing a gradual revival of 5.1% in 2021.

Expected GDP growth between 2020-2022



These macroeconomic trends are also expected to be partly mirrored by the developments in the broad construction sector.

The volume index of **production in the broad construction sector** is forecast to decline annually by 10.7 index points (ip) in 2020. However, this is expected to be recovered in 2021 with index points climbing up by 7.0 ip. Similarly, the volume index of production in the sub-sectors (construction of buildings and construction of civil engineering) shall decrease by 10.7 ip and 10.5 ip in 2020, respectively. Nevertheless, both these are expected to witness an annual growth by 6.7 ip and 7.1 ip in 2021, respectively.

The total **turnover** in the broad construction sector is expected to decline annually by 10.9% in 2020, reaching EUR 65.9 billion, before recovering in 2021, reaching EUR 71.2 billion (+8.9%).

Similarly, the total **value added** in the broad construction sector in 2020 is projected to decline by 10.4%, totalling EUR 28.8 million, the lowest value since 2016. Nonetheless, a growth by 8.2% is expected in 2021 with values reaching up to EUR 31.3 million.

The **housing market** is expected to slow down in 2020. The indexed values of 'building permits –

number of dwellings' in the first quarter of 2020²³³ is expected to plunge by 30.1 index points, in comparison to the same quarter last year. At the same time, housing prices are expected to fall in 2020. The national average price of houses is projected to drop by 4.1% on an average. Apartments are expected to drop in value by 5.3%²³⁴.

The Danish government has lifted the limitation imposed on construction budget for 2020. It has allowed large-scale energy renovations at sports and social facilities, which have been suspended due to COVID-19 pandemic²³⁵.

The government has taken several initiatives to make sure that liquidity does not become an obstacle when initiating construction activities. The municipalities have been granted an exemption so the increased construction activity can be funded by borrowing. Furthermore, the government and Local Government Denmark have decided on allocating a general loan pool of DKK 500.0 million (EUR 67.1 million) for enhancing liquidity in underprivileged municipalities²³⁶.

Another notable infrastructure project in Denmark include '**Viking Link**'. It is a planned 760 kilometre long electricity interconnector between Denmark and Great Britain. The interconnector would enable more effective utilisation of renewable energy, access to sustainable electricity generation, and improved security of electricity supplies²³⁷. The project, with a budget of EUR 2.0 billion, is planned to be completed by December 2023²³⁸.

The **Fehmarn Belt Tunnel**, yet another project which would connect Denmark and Germany, was put on hold. It has recently received the consent from Danish government and is now expected to start in January 2021. Construction was further postponed by six months because of the COVID-19 pandemic. This project has an estimated cost of around DKK 52.6 billion (EUR 7.4 billion)²³⁹.

According to the Confederation of Danish Industry, the construction related manufacturing and architectural and engineering services are the most sensitive to COVID-19, due to the export oriented nature of these sub-sectors and expect to be negatively affected by the pandemic. For Denmark, the economic situation in the main export markets (UK, Germany, Sweden, Norway) will determine the impact on the export-dependent construction sub-sectors in 2020-2021.

Narrow construction and real estate sub-sectors focus on the domestic market, and therefore, the outcomes for this sub-sector will depend on the general economic situation in Denmark. The Confederation expects that the impact on these sub-sectors will be visible by the end of 2020.

The strategies implemented by the government including the allocation of increased public expenditure on primary schools in the 2020 Budget Bill and a political agreement of reserving DKK 102.0 million (EUR 13.7 million) for initiatives to upskill the low skilled workers in October 2019²⁴⁰ promise an optimistic future in the long run²⁴¹.

According to the Confederation of Danish Industry, as a part of COVID-19 recovery plan, the Government of Denmark is expected to boost investment in sustainable and green construction in the next couple of years.

References

- 1 Please note that this 2019 data is a nowcast - please refer to the methodology notes for further details.
 2 The gross operating rate is the ratio of Gross Operating Surplus to Turnover, and is an indicator of profitability.
 3 No data available for subsequent years.
 4 Please note that this 2019 data is a nowcast - please refer to the methodology notes for further details.
 5 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
 6 Ibidem
 7 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
 8 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
 9 Please note that this 2017 data is a nowcast - please refer to the methodology notes for further details.
 10 Please note that this 2019 data is a nowcast - please refer to the methodology notes for further details.
 11 No data available for subsequent years.
 12 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
 13 No data available for subsequent years.
 14 Please note that this 2019 data is a nowcast - please refer to the methodology notes for further details.
 15 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
 16 Please note that this 2019 data is a nowcast - please refer to the methodology notes for further details.
 17 No data available for subsequent years.
 18 The gross operating rate is the ratio of Gross Operating Surplus to Turnover, and is an indicator of profitability.
 19 No data available for subsequent years.
 20 Please note that this 2019 data is a nowcast - please refer to the methodology notes for further details.
 21 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
 22 European Commission, Country Report Denmark 2019. February 2019. https://ec.europa.eu/info/sites/info/files/file_import/2019-european-semester-country-report-denmark_en.pdf
 23 No data available for subsequent years.
 24 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
 25 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
 26 The Global Competitiveness Report 2019, http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
 27 Denmark is EU top performer on global entrepreneurship index, <https://www.copcap.com/news/denmark-is-fourth-best-on-global-entrepreneurship-index>
 28 Denmark is EU top performer on global entrepreneurship index, <https://www.copcap.com/news/denmark-is-fourth-best-on-global-entrepreneurship-index>
 29 Entrepreneurship thriving in Denmark – but we should not be blinded by the success <https://dtusciencepark.com/news/entrepreneurship-in-denmark/>
 30 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
 31 SME access to finance in the EU countries 2019, <https://ec.europa.eu/docsroom/documents/38442>
 32 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
 33 SME access to finance in the EU countries 2019, <https://ec.europa.eu/docsroom/documents/38442>
 34 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
 35 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
 36 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
 37 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
 38 Denmark SBA Fact Sheet 2019, <https://ec.europa.eu/docsroom/documents/32581/attachments/8/translations/en/renditions/native>
 39 Denmark SBA Fact Sheet 2019, <https://ec.europa.eu/docsroom/documents/32581/attachments/8/translations/en/renditions/native>
 40 Denmark SBA Fact Sheet 2019, <https://ec.europa.eu/docsroom/documents/32581/attachments/8/translations/en/renditions/native>
 41 SME access to finance in the EU countries 2019, <https://ec.europa.eu/docsroom/documents/38442>
 42 Financing SMEs and Entrepreneurs 2020, <https://www.oecd-ilibrary.org/docserver/061fe03d-en.pdf?expires=1597241089&id=id&accname=guest&checksum=BADC538697DC32615DFBDC9BAB43BC83>
 43 Market Monitor construction Denmark 2019, <https://group.atradius.com/publications/market-monitor-construction-denmark-2019.html>
 44 No data available for subsequent years.
 45 Denmark: Business confidence among manufacturing firms improves in June, June 2020, <https://www.focus-economics.com/countries/denmark/news/business-confidence/business-confidence-among-manufacturing-firms-improves-in>

Country Fact Sheet Denmark

46	No data available for subsequent years.
47	No data available for subsequent years.
48	No data available for subsequent years.
49	According to Eurostat, construction services comprises Construction Abroad (code 250) and Construction in the Compiling Economy (code 251). They do not include architectural services, or engineering services.
50	No data available for 2019.
51	As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
52	No data available for subsequent years.
53	EIB Group survey on investment and investment finance 2019. Country overview: Denmark, https://www.eib.org/attachments/efs/eibis_2019_denmark_en.pdf
54	Add in footnote that data from 2010 to 2013 is unavailable
55	European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european_semester_country-report-denmark_en.pdf
56	Statistics Denmark, Residential Construction by use, phase of construction and time. http://www.statbank.dk/BYGV05A
57	No data available for 2019.
58	Data for 2010 is not available
59	Denmark Home Ownership Rate, https://tradingeconomics.com/denmark/home-ownership-rate#targetText=Home%20Ownership%20Rate%20in%20Denmark,of%2061.70%20percent%20in%202016.
60	The housing cost overburden rate is the percentage of the population living in households where the total housing costs represent more than 40 % of disposable income.
61	Eurostat, Housing cost overburden rate by age, sex and poverty status - EU-SILC survey. http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_lvho07a&lang=en
62	European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european_semester_country-report-denmark_en.pdf
63	The overcrowding rate is defined as the percentage of the population living in an overcrowded household.
64	Eurostat, Overcrowding rate. http://ec.europa.eu/eurostat/product?code=ilc_lvho05a&language=en&mode=view
65	This figure is an estimation, as per the website.
66	Eurostat, Severe housing deprivation rate is defined as the percentage of population living in the dwelling which is considered as overcrowded, while also exhibiting at least one of the housing deprivation measures. Housing deprivation is a measure of poor amenities and is calculated by referring to those households with a leaking roof, no bath/shower and no indoor toilet, or a dwelling considered too dark.
67	Severe housing deprivation rate, http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_mdho06a&lang=en
68	This figure is an estimation, as per the website.
69	World Economic Forum, The Global Competitiveness Report 2019. http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
70	European Commission, Country Report Denmark 2019. February 2019. https://ec.europa.eu/info/sites/info/files/file_import/2019-european-semester-country-report-denmark_en.pdf
71	No data available for subsequent years.
72	No data available for company deaths in 2010 and for company births in 2010 and 2011, under real estate activities sub-sector
73	Market Monitor construction Denmark 2019, https://group.atradius.com/publications/market-monitor-construction-denmark-2019.html
74	Corporate insolvency growth to accelerate in 2020, https://group.atradius.com/economic-research/corporate-insolvency-growth-to-accelerate-in-2020.html
75	As per Atradius N.V., Western Europe comprises of the following countries: Austria, Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Netherlands, Spain, Sweden, Switzerland and United Kingdom
76	Denmark: businesses safeguard cashflow, https://group.atradius.com/publications/payment-practices-barometer-denmark-2019.html
77	As per Atradius N.V., Western Europe comprises of the following countries: Austria, Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Netherlands, Spain, Sweden, Switzerland and United Kingdom
78	Denmark: businesses safeguard cashflow, https://group.atradius.com/publications/payment-practices-barometer-denmark-2019.html
79	Denmark: businesses safeguard cashflow, https://group.atradius.com/publications/payment-practices-barometer-denmark-2019.html
80	As per Atradius N.V., Western Europe comprises of the following countries: Austria, Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Netherlands, Spain, Sweden, Switzerland and United Kingdom
81	Denmark: businesses safeguard cashflow, https://group.atradius.com/publications/payment-practices-barometer-denmark-2019.html
82	As per Atradius N.V., Western Europe comprises of the following countries: Austria, Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Netherlands, Spain, Sweden, Switzerland and United Kingdom
83	Denmark SBA Fact Sheet 2019, https://ec.europa.eu/docsroom/documents/32581/attachments/8/translations/en/renditions/native
84	As per Atradius N.V., Western Europe comprises of the following countries: Austria, Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Netherlands, Spain, Sweden, Switzerland and United Kingdom
85	Denmark: businesses safeguard cashflow, https://group.atradius.com/publications/payment-practices-barometer-denmark-2019.html
86	Denmark: businesses safeguard cashflow, https://group.atradius.com/publications/payment-practices-barometer-denmark-2019.html
87	As per Atradius N.V., Western Europe comprises of the following countries: Austria, Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Netherlands, Spain, Sweden, Switzerland and United Kingdom
88	Denmark: businesses safeguard cashflow, https://group.atradius.com/publications/payment-practices-barometer-denmark-2019.html

- 89 World Bank Group, Doing Business 2020, Ease of Doing Business for Denmark.
<https://www.doingbusiness.org/content/dam/doingBusiness/country/d/denmark/DNK.pdf>
- 90 The warehouse in this example is defined as a structure for general storage activities, with two stories, above ground and with total constructed area of approx. 1,300 square meters. The ground, on which the warehouse is built is owned by the company that will use it and valued at 50 times income per capita. There are architectural and technical plans prepared for the warehouse, which are also taken into account and counted as procedures if their preparation requires obtaining further documentation or getting prior approvals from external agencies. Finally, in this example the warehouse takes 30 weeks to construct, excl. all delays due to administrative and regulatory requirements.
- 91 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
- 92 CEDEFOP, Denmark Country Forecast Skills Supply and Demand up to 2030. 2018.
https://www.cedefop.europa.eu/files/cedefop_skills_forecast_2018_-_denmark.pdf
- 93 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
- 94 European Commission, Country Report Denmark 2019. February 2019. https://ec.europa.eu/info/sites/info/files/file_import/2019-european-semester-country-report-denmark_en.pdf
- 95 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
- 96 Denmark: better opportunities for VET students progression into higher education, <https://www.cedefop.europa.eu/en/news-and-press/news/denmark-better-opportunities-vet-students-progression-higher-education>
- 97 Denmark: new guidelines for national educational guidance, <https://www.cedefop.europa.eu/en/news-and-press/news/denmark-new-guidelines-national-educational-guidance>
- 98 Denmark - COVID-19 Danish response (FH), <https://www.ituc-csi.org/denmark-covid-19-danish-response>
- 99 Working time distribution will become more flexible, https://www.ituc-csi.org/IMG/pdf/fact_sheet_-_working_time_distribution_will_become_more_flexible.pdf
- 100 Tripartite agreement aims to help employees, https://www.ituc-csi.org/IMG/pdf/fact_sheet_-_tripartite_agreement_aims_to_help_employees.pdf
- 101 Tripartite agreement on temporary wage compensation for private sector employees, https://www.ituc-csi.org/IMG/pdf/tripartite_agreement_on_temporary_wage_compensation_for_private_sector_employees.pdf
- 102 Danmarks Nationale reformprogram 2020, https://ec.europa.eu/info/sites/info/files/2020-european-semester-national-reform-programme-denmark_en.pdf
- 103 Danmarks Nationale reformprogram 2020, https://ec.europa.eu/info/sites/info/files/2020-european-semester-national-reform-programme-denmark_en.pdf
- 104 The Association of Consulting Engineers, BYGGERIET 2035 – EN FORESIGHT-ANALYSE, March 2018.
http://www.frinet.dk/media/1064834/fri_rapport_byggeriet_2035_web.pdf
- 105 No data available for subsequent years
- 106 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
- 107 492 kg of municipal waste generated per person in the EU, <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20200318-1>
- 108 No data available for subsequent years
- 109 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
- 110 OECD-EPR-Denmark-2019-lv.pdf, https://mfvm.dk/fileadmin/user_upload/MFVM/Nyheder/OECD-EPR-Denmark-2019-lv.pdf
- 111 No data available for subsequent years.
- 112 OECD-EPR-Denmark-2019-lv.pdf, https://mfvm.dk/fileadmin/user_upload/MFVM/Nyheder/OECD-EPR-Denmark-2019-lv.pdf
- 113 Bio by Deloitte, Construction and Demolition Waste Management in Denmark, September 2015.
http://ec.europa.eu/environment/waste/studies/deliverables/CDW_Denmark_Factsheet_Final.pdf
- 114 No data available for 2019.
- 115 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
- 116 European Commission, European innovation scoreboard 2020. <https://ec.europa.eu/docsroom/documents/41872>
- 117 European innovation scoreboard 2020, <https://ec.europa.eu/docsroom/documents/41872>
- 118 A full-time equivalent (FTE) is a unit to measure employed persons in a way that makes them comparable, although they may work a different number of hours per week. The unit is obtained by comparing an employee's average number of hours worked to the average number of hours of a full-time worker. A full-time person is therefore counted as one FTE, while a part-time worker gets a score in proportion to the hours worked.
- 119 The 2018 EU Industrial R&D Investment Scoreboard, <https://iri.jrc.ec.europa.eu/scoreboard18.html>
- 120 OECD-EPR-Denmark-2019, https://mfvm.dk/fileadmin/user_upload/MFVM/Nyheder/OECD-EPR-Denmark-2019-lv.pdf
- 121 OM Innobyg, <http://www.innobyg.dk/om-innobyg.aspx>
- 122 OECD-EPR-Denmark-2019, https://mfvm.dk/fileadmin/user_upload/MFVM/Nyheder/OECD-EPR-Denmark-2019-lv.pdf
- 123 Miljøstyrelsen, Søger du tilskud under MUDP?. <http://ecoinnovation.dk/tilskud/soeger-du-tilskud-under-mudp/>
- 124 What is The Danish Eco-Innovation subsidy scheme (MUDP)?, <https://leakagemanagement.net/about/mudp/>

- 125 Ministry of Foreign Affairs, Funding and financial incentives in Denmark 2017. March 2017.
http://www.investindk.com/~media/Files/Sheets/Framework%20conditions/Funding_and_Financial_Incentives2017.ashx
- 126 ELFORSK project selected for Sustainable Build Innovation Challenge 2019. <https://elforsk.dk/nyheder/elforsk-projekt-udvalgt-til-sustainable-build-innovation-challenge-2019>
- 127 OECD-EPR-Denmark-2019, https://mfvm.dk/fileadmin/user_upload/MFVM/Nyheder/OECD-EPR-Denmark-2019-lv.pdf
- 128 Sustainable building practices are becoming entrenched in Danish municipalities, <https://stateofgreen.com/en/partners/state-of-green/news/sustainable-building-practices-are-becoming-entrenched-in-danish-municipalities/>
- 129 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
- 130 Denmark SBA Fact Sheet 2019, <https://ec.europa.eu/docsroom/documents/32581/attachments/8/translations/en/renditions/native>
- 131 NBS, International Bim Report 2016, <http://summitaec.com/wp-content/uploads/2016/03/NBS-International-BIM-Report-2016.pdf>
- 132 European Construction Sector Observatory, Building Information Modelling in the EU construction sector, <https://ec.europa.eu/docsroom/documents/34518>
- 133 European Construction Sector Observatory, Building Information Modelling in the EU construction sector, <https://ec.europa.eu/docsroom/documents/34518>
- 134 BIM in Europe: level of adoption in different countries – PART 3, Latest review on the level of implementation of BIM in Europe outlining the current situation in: Denmark, Iceland, Spain and Sweden, <https://biblus.accasoftware.com/en/bim-in-europe-level-of-adoption-in-different-countries-part-3/>
- 135 NBS, International Bim Report 2016, <http://summitaec.com/wp-content/uploads/2016/03/NBS-International-BIM-Report-2016.pdf>
- 136 BIM in Europe: level of adoption in different countries – PART 3, Latest review on the level of implementation of BIM in Europe outlining the current situation in: Denmark, Iceland, Spain and Sweden, <https://biblus.accasoftware.com/en/bim-in-europe-level-of-adoption-in-different-countries-part-3/>
- 137 New housing strategy from the government, <https://www.huseierne.no/nyheter/2018/ny-boligstrategi-fra-regjeringen/>
- 138 National Strategies For Combating Homelessness, <https://www.oecd.org/els/family/HC3-2-Homeless-strategies.pdf>
- 139 National Strategies For Combating Homelessness, <https://www.oecd.org/els/family/HC3-2-Homeless-strategies.pdf>
- 140 European Commission, Commission Staff Working Document – Country Report Denmark 2016. February 2016.
http://ec.europa.eu/europe2020/pdf/csr2016/cr2016_denmark_en.pdf
- 141 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
- 142 Danish Transport, Construction and Housing Authority, Tilskud til skæve boliger. <https://www.trafikstyrelsen.dk/DA/Bolig/Puljer/Aktuelle-puljer/Tilskud-til-skaeve-boliger.aspx>
- 143 Danmarks Nationale reformprogram 2020, https://ec.europa.eu/info/sites/info/files/2020-european-semester-national-reform-programme-denmark_en.pdf
- 144 Danish Transport, Construction and Housing Authority, Byfornyelse. <https://www.trafikstyrelsen.dk/DA/Bolig/Byfornyelse.aspx>
- 145 Europe's hotbed for smart city investment, <https://investindk.com/set-up-a-business/tech/smart-city>
- 146 National Strategies For Combating Homelessness, <https://www.oecd.org/els/family/HC3-2-Homeless-strategies.pdf>
- 147 Europe's hotbed for smart city investment, <https://investindk.com/set-up-a-business/tech/smart-city>
- 148 Tumakuru will have a 'sister city' in Denmark, <https://www.thehindu.com/news/cities/bangalore/tumakuru-will-have-a-sister-city-in-denmark/article30109898.ece>
- 149 Green recovery for Denmark: a new renovation scheme for the social housing sector, <https://www.ourhomesourdeal.eu/post/green-recovery-for-denmark>
- 150 Green recovery for Denmark: a new renovation scheme for the social housing sector, <https://www.ourhomesourdeal.eu/post/green-recovery-for-denmark>
- 151 International Monetary Fund, Denmark: Staff Concluding Statement of the 2016 Article IV Mission. May 2016.
<https://www.imf.org/external/np/ms/2016/050416.htm>
- 152 Finanstilsynet, Supervisory Diamond for mortgage-credit institutions. September 2014.
<https://www.finanstilsynet.dk/en/Nyheder%20og%20presse/Pressemeddelelser/Arkiv/Presse-2014/Tilsynsdiamant%20for%20realkreditinstitutter>
- 153 Ministry for Economic Affairs and the Interior, Denmark's National Reform Programme, April 2018.
https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-denmark_en.pdf
- 154 Bygningsreglement, Bygningsreglement 2018. http://byggningsreglementet.dk/~media/Br/BR-English/BR18_Executive_order_on_building_regulations_2018.pdf
- 155 Dansk Byggeri, Summary of rules for collective agreements, the industrial disputes procedure and other relevant issues relating to building and construction work in Denmark. 2016. https://www.danskbyggeri.dk/media/5711/vejledning_engelsk_2016_net.pdf
- 156 Ministry of Transport and Construction, Nu bliver det nemmere at bygge i Danmark. May 2016. <http://www.trm.dk/da/ministeriet/nu-bliver-det-nemmere-at-bygge-i-danmark>
- 157 Jura Info, Ændringer af varmeforsyningsloven og byggeloven vedtaget. May 2015. <http://www.jurainfo.dk/aendringer-af-varmeforsyningsloven-og-byggeloven-vedtaget/>
- 158 Danish Knowledge Centre for Energy Savings in Buildings Energy Requirements of BR18, April 2018,
https://www.byggeriogenergi.dk/media/2202/danishbuildingregulations_2018_energy-requirements.pdf
- 159 Danish Transport, Construction and Housing Authority, Byggeskadeforsikring. <https://www.trafikstyrelsen.dk/DA/Byggeri/Byggeriets-regler/Byggeskadeforsikring.aspx>
- 160 Boligejer, Bekendtgørelse om obligatorisk byggeskadeforsikring. http://boligejer.dk/obligatorisk_byggeskadeforsikring

Country Fact Sheet Denmark

- 161 Danish Building and Construction Arbitration Board, About the Danish Building and Construction Arbitration Board.
<http://voldgift.dk/?lang=en>
- 162 DLA Piper, Insurances, <https://www.dlapiperrealworld.com/law/index.html?t=construction&c=DK&s=forms-of-contract%20procurement-methods&q=insurances>
- 163 This includes total investment by the construction and real estate sub-sectors, defined as gross fixed capital formation, i.e. acquisitions minus disposal, of total fixed assets (e.g. machinery and equipment, vehicles, dwellings and other buildings).
- 164 No data available for subsequent years.
- 165 No data available for subsequent years.
- 166 This includes total investment (i.e. gross fixed capital formation) in dwellings and non-residential construction and civil engineering by investors in the general economy (e.g. industry, financial and non-financial services, households, agricultural sector, etc.).
- 167 No data available for subsequent years.
- 168 The indicator gross fixed capital formation in non-residential and civil engineering refers to the Eurostat indicator «Other buildings and structures»
- 169 According to the OECD, inland infrastructure includes road, rail, inland waterways, maritime ports and airports and takes account of all sources of financing.
- 170 No data available for subsequent years.
- 171 No data available for subsequent years.
- 172 No data available for subsequent years.
- 173 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
- 174 Mobility And Transport, https://ec.europa.eu/transport/facts-fundings/scoreboard/countries/denmark/investments-infrastructure_en
- 175 Transport in the European Union Current Trends and Issues, March 2019, <https://ec.europa.eu/transport/sites/transport/files/2019-transport-in-the-eu-current-trends-and-issues.pdf#page=42>
- 176 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
- 177 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
- 178 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
- 179 Construction in Greater Copenhagen, <https://www.copcap.com/set-up-a-business/key-sectors/construction>
- 180 Construction in Greater Copenhagen, <https://www.copcap.com/set-up-a-business/key-sectors/construction>
- 181 Ring 3 Light Rail, Copenhagen, <https://www.railway-technology.com/projects/ring-3-light-rail-copenhagen/#targetText=The%20Ring%20is%20a,Lundtofte%20town%20in%20the%20north>.
- 182 Ring 3 Light Rail, Copenhagen, <https://www.railway-technology.com/projects/ring-3-light-rail-copenhagen/#targetText=The%20Ring%20is%20a,Lundtofte%20town%20in%20the%20north>.
- 183 The Danish Hospital Construction Projects Conference and Expo 2016. May 2016. http://buildingnetwork.dk/wp-content/uploads/2016/04/Konferenceprog_24maj.pdf
- 184 Fehmarn Belt Fixed Link: Denmark approves start of work for €7 billion underwater tunnel to Germany, <https://www.euronews.com/2020/04/27/denmark-approves-start-of-work-for-7-billion-underwater-tunnel-to-germany>
- 185 Education and training monitor 2019 – Denmark, https://ec.europa.eu/education/sites/education/files/document-library-docs/et-monitor-report-2019-denmark_en.pdf
- 186 Developments in vocational education and training policy in 2015–19, Denmark, https://www.cedefop.europa.eu/files/developments_in_vocational_education_and_training_policy_in_2015-19_denmark.pdf
- 187 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
- 188 Education and training monitor 2019 – Denmark, https://ec.europa.eu/education/sites/education/files/document-library-docs/et-monitor-report-2019-denmark_en.pdf
- 189 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
- 190 Education and training monitor 2019 – Denmark, https://ec.europa.eu/education/sites/education/files/document-library-docs/et-monitor-report-2019-denmark_en.pdf
- 191 Education and training monitor 2019 – Denmark, https://ec.europa.eu/education/sites/education/files/document-library-docs/et-monitor-report-2019-denmark_en.pdf
- 192 Education and training monitor 2019 – Denmark, https://ec.europa.eu/education/sites/education/files/document-library-docs/et-monitor-report-2019-denmark_en.pdf
- 193 Education and training monitor 2019 – Denmark, https://ec.europa.eu/education/sites/education/files/document-library-docs/et-monitor-report-2019-denmark_en.pdf
- 194 Byg fremtiden, <http://www.bygfremtiden.dk/byggeri+c12+teknologi>
- 195 <http://tekniskskoleesbjerg.dk/folkeskolen/byg-et-hus.aspx>
- 196 National Reforms in Vocational Education and Training and Adult Learning, April 2019, https://eacea.ec.europa.eu/national-policies/eurydice/content/national-reforms-vocational-education-and-training-and-adult-learning-18_en
- 197 FIEC and EFBWW, Social Identity Cards in the European Construction Industry, January 2015
- 198 OECD Environmental Performance Reviews, Denmark 2019, https://mfvm.dk/fileadmin/user_upload/MFVM/Nyheder/OECD-EPR-Denmark-2019-lv.pdf

Country Fact Sheet Denmark

- 199 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
- 200 A Guide to the Most Sustainable Buildings in Copenhagen <https://www.scandinaviastandard.com/a-guide-to-the-most-sustainable-buildings-in-copenhagen/>
- 201 Coenagen capacity, Sustainable construction: a burgeoning business, <http://www.copcap.com/key-sectors-map/cleantech/sustainable%20construction/background>
- 202 Denmark's Draft - National Energy and Climate Plan. https://ens.dk/sites/ens.dk/files/Energiklimapolitik/denmarks_draft_integrated_energy_and_climate_plan.pdf
- 203 Energy Labels for Buildings, <https://ens.dk/en/our-responsibilities/energy-labels-buildings>
- 204 Energy Agency, Lavenergiklasser. <http://www.ens.dk/forbrug-besparelser/byggeriets-energiforbrug/lavenergiklasser>
- 205 Landsbyggefonden, Renoveringsstøtteordningen - nyt regulativ. <https://lbf.dev.appstract.dk/om-lbf/lbf-orienterer/2015/6/renoveringsstoetteordningen-nyt-regulativ/>
- 206 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
- 207 Bolius, Her er det nye håndværkerfradrag for 2016 og 2017. January 2017. <https://www.bolius.dk/her-er-det-nye-haandvaerkerfradrag-for-2016-og-2017-28556/>
- 208 Single Market Scoreboard-Denmark, 2020 edition https://ec.europa.eu/internal_market/scoreboard/docs/2020/07/member-states/dk_en.pdf
- 209 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
- 210 Single Market Scoreboard-Denmark, 2020 edition https://ec.europa.eu/internal_market/scoreboard/docs/2020/07/member-states/dk_en.pdf
- 211 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
- 212 Denmark Corruption Report, <https://www.ganintegrity.com/portal/country-profiles/denmark/>
- 213 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
- 214 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
- 215 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
- 216 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf
- 217 JRC Report EUR 27511 EN, State of implementation of the Eurocodes in the European Union. 2015. <http://eurocodes.jrc.ec.europa.eu/showpublication.php?id=537>
- 218 World Economic Forum, The Global Competitiveness Report 2019. http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
- 219 As the EU-27 average data was not available, the EU-28 average was used for comparative purpose
- 220 Denmark SBA Fact Sheet 2019, <https://ec.europa.eu/docsroom/documents/38662/attachments/8/translations/en/renditions/native>
- 221 Denmark SBA Fact Sheet 2019, <https://ec.europa.eu/docsroom/documents/38662/attachments/8/translations/en/renditions/native>
- 222 Denmark SBA Fact Sheet 2019, <https://ec.europa.eu/docsroom/documents/38662/attachments/8/translations/en/renditions/native>
- 223 Denmark SBA Fact Sheet 2019, <https://ec.europa.eu/docsroom/documents/38662/attachments/8/translations/en/renditions/native>
- 224 Denmark SBA Fact Sheet 2019, <https://ec.europa.eu/docsroom/documents/38662/attachments/8/translations/en/renditions/native>
- 225 Denmark SBA Fact Sheet 2019, <https://ec.europa.eu/docsroom/documents/38662/attachments/8/translations/en/renditions/native>
- 226 Data unavailable for subsequent years
- 227 A foreign affiliate as explained in inward FATS statistics is an enterprise resident in a country which is under the control of an institutional unit not resident in the same country.
- 228 Data unavailable for subsequent years
- 229 Outward FATS are statistics explaining the activity of foreign affiliates abroad controlled by the compiling country.
- 230 Data unavailable for subsequent years
- 231 Data unavailable for subsequent years
- 232 World Economic Forum, The Global Competitiveness Report 2019. http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
- 233 Forecasts for 2020 available for Q1 only
- 234 Denmark's housing prices predicted to fall due to COVID-19, http://www.xinhuanet.com/english/2020-05/11/c_139048361.htm
- 235 Denmark undertakes large-scale energy efficiency renovations during COVID-19 crisis, <https://stateofgreen.com/en/partners/state-of-green/news/denmark-undertakes-large-scale-energy-efficiency-renovations-during-covid-19-crisis/>
- 236 Danmarks Nationale reformprogram 2020, https://ec.europa.eu/info/sites/info/files/2020-european-semester-national-reform-programme-denmark_en.pdf
- 237 Viking Link: Interconnector from Denmark to Great Britain, <https://en.energinet.dk/Infrastructure-Projects/Projektliste/Viking-Link>
- 238 National Grid starts construction on UK-Denmark electricity link, <https://energy.economictimes.indiatimes.com/news/power/national-grid-starts-construction-on-uk-denmark-electricity-link/76939090>
- 239 Fehmarn Belt Fixed Link: Denmark approves start of work for €7 billion underwater tunnel to Germany, <https://www.euronews.com/2020/04/27/denmark-approves-start-of-work-for-7-billion-underwater-tunnel-to-germany>
- 240 European Commission, Country Report Denmark 2020. February 2020. https://ec.europa.eu/info/sites/info/files/2020-european-semester-country-report-denmark_en.pdf

²⁴¹ Construction trends and future infrastructure in Denmark, https://www.euroconstruct.org/ec/blog/2020_02