



European Construction Sector Observatory

Country profile Spain

March 2017

In a nutshell

The Spanish construction sector is showing signs of recovery after being under high pressure during the economic crisis, with the number of operating companies increasing by 11.4% in 2014. Similarly, the number of workers employed in the broad construction sector increased by 6.0% between 2013 and 2015, reaching 1.6 million, though still 47.4% below the 2008 level (3.1 million).

In parallel, the **turnover of the broad construction** sector reached EUR 172.3 billion in 2015, still 60.9% lower than in 2008 with construction costs experiencing a 6.3% increase between 2008 and 2015, particularly due to increasing input material prices and labour costs. As a result, the **gross operating surplus** fell by 64.7% from 2008 to 2014.

Business confidence has gradually been improving since 2012, even if all major indicators remain far below pre-crisis values. **Access to housing** has been steadily improving since 2008, supported by the less stringent credit conditions (decreasing mortgage rates up to 1.4% in 2016) and declining house prices (-36% between 2008 and 2015, although they are now stabilising). These constitute the first signs of recovery for the Spanish **real estate and residential construction markets**.

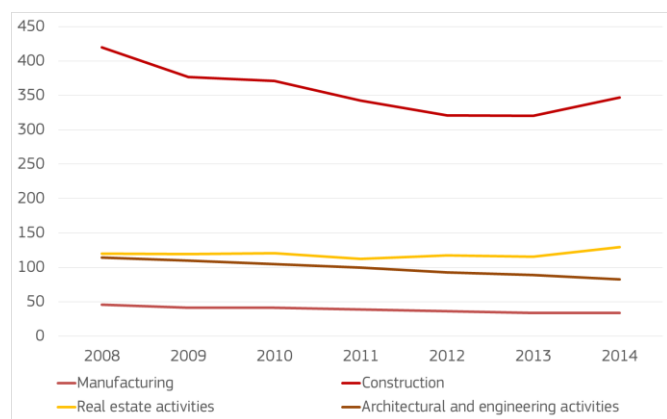
The **revival of the industry** will mostly rely on housing renovation, thermal upgrade and sustainable construction, as supported by several policy schemes and dedicated programmes. Increased investments in **infrastructure** (namely railway, highway and urban transport) will also play a positive role, enabled both by EU and national funding. An instance of the latter is the Strategic Infrastructure and Transport Plan 2005-2020, with a budget of EUR 249 billion for the development and upgrade of the transport network.

The Spanish construction industry boasts a good international presence, with American contracts representing more than half of its non-domestic turnover, and contracts secured in the Middle East on the increase. **Exports** of construction products and services, particularly infrastructure expertise, have also been growing. However, the domestic context remains suboptimal, particularly with respect to the high unemployment rate and the mismatch between skill demand and supply, which constitute the main threats for the sustained growth of the sector.

1. Key figures

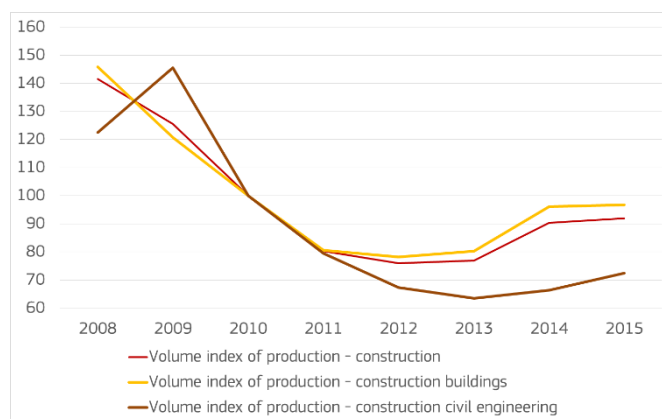
The **number of enterprises** in the Spanish broad construction sector amounted to **592,998** in 2014 (Figure 1). Companies in the narrow construction sector accounted for 58.5% of the total, followed by real estate activities (21.8%), architectural and engineering activities (14%) and manufacturing (5.7%). Despite the upward trend registered since 2013, the overall number remains 15.3% below 2008 figures. Most of the decline was reported in the architectural and engineering activities (-27.6%) and the manufacturing sub-sectors (-25.7%), whereas the number of companies in real estate activities increased by 7.7%. **Production** in construction declined importantly between 2008 and 2013, and has been recovering since, although in 2015 it remained 35% below 2008 values. Production in construction of buildings and civil engineering followed the same trend and decreased by 33.7% and 40.9%, respectively (Figure 2).

Figure 1: Number of enterprises in the construction sector in Spain over 2008-2014



Source: Eurostat, 2017.

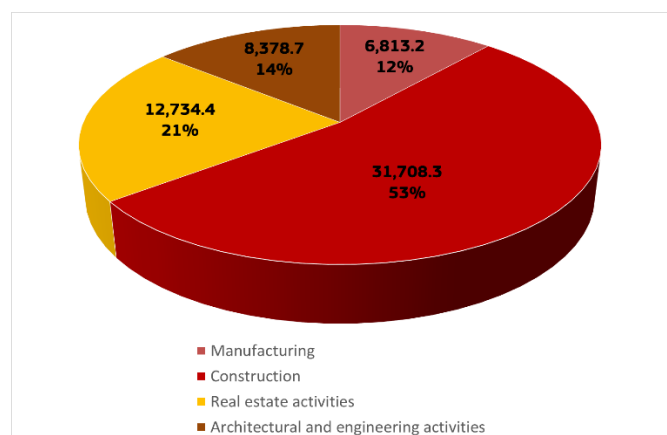
Figure 2: Volume index of production in the construction sector in Spain, 2008-2015 (2010=100)



Source: Eurostat, 2017

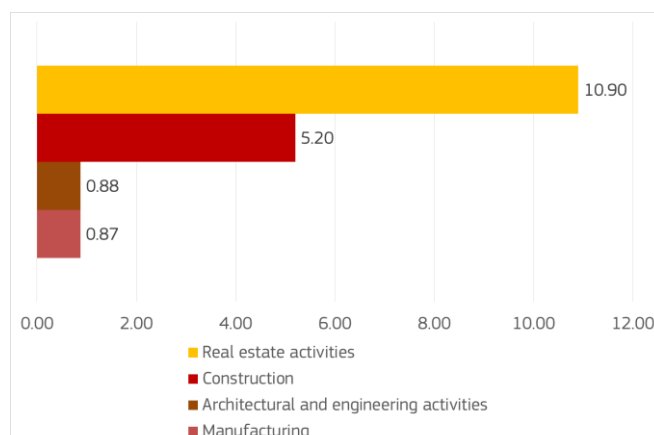
In 2014, the total **value added**¹ of the broad construction sector amounted EUR 59.6 billion (Figure 3), with narrow construction having the largest share (53.2%). The share of gross value added of the broad construction sector in the GDP² reached 17.9% in 2014, with real estate activities having the largest contribution (10.9%) (Figure 4).

Figure 3: Value added in the construction sector in Spain in 2014 (EUR m)



Source: Eurostat, 2017

Figure 4: Gross value added as share of GDP in the construction sector in Spain in 2014 (%)



Source: Eurostat, 2017

2. Macroeconomic indicators

Employment

The overall **unemployment rate** in Spain reached 19.6% in 2016, being one of the highest in the EU-28 and double the EU-28 average of 8.5%. It has been on the increase since 2007 (at 8.2%), peaking in 2013 at 26.1% and declining since. Youth unemployment (below the age of 25) was at 44.4% in 2016, well above both the EU-28 average of 18.8% and the 2008 level of 24.5%³.

General economic indicators

In 2016, the **GDP** of Spain amounted to EUR 1,102 billion, a 3.2% increase since the previous year but still 1.6% below the 2008 value (Table 1). The same year, the country's potential GDP was EUR 1,119 billion, 0.5% lower than 2015. Consequently, the output gap was negative (-1.4%), indicating that the increase in demand in the economy is slower than supply. However, the output gap has been improving since 2014 (-8.4%), reaching in 2016 its best result since 2008. In addition, it is expected that the output gap will turn positive from 2017 on, in line with the decreased unemployment and controlled inflationary trends.

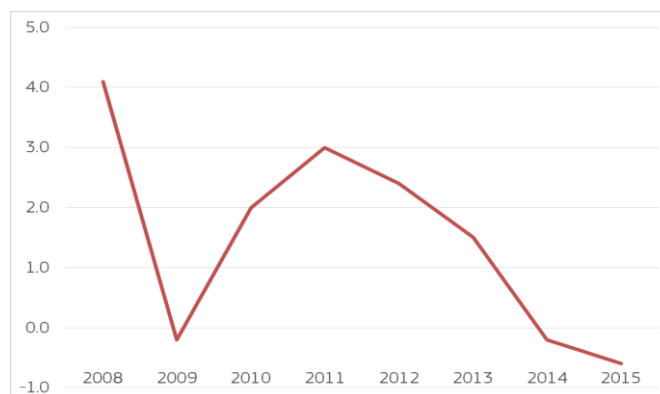
Table 1: Actual and potential GDP and output gap in Spain in 2016 and change from 2015

	Value	Change (%)
Gross Domestic Product (EUR bn)	1,102	+ 3.2
Potential Gross Domestic Product (EUR bn)	1,119	- 0.5
Output gap in %	- 1.4	-

Source: AMECO, 2017.

The **inflation rate** was generally following the market trends in the country, dropping to -0.2% in 2009 and subsequently peaking at 3% in 2011. However, it has been decreasing since then, falling again to -0.6% in 2015 (Figure 5).

Figure 5: Annual inflation rate in Spain in the period 2008-2015 (%)



Source: Eurostat, 2017.

Demographics

Population growth

The **total population** of Spain amounted to 46.4 million people in 2015. It has not experienced major changes since 2008, changing in the range of 2%. However, it should be noted that low employment rates, especially among youth, have caused the outflow of labour force from the country, decreasing its factual population⁴. The population is further projected to decrease by 4.2% until 2030, but recover slightly by 2050, reaching 45.5 million people (Table 2).

Table 2: Population projections for Spain until 2050

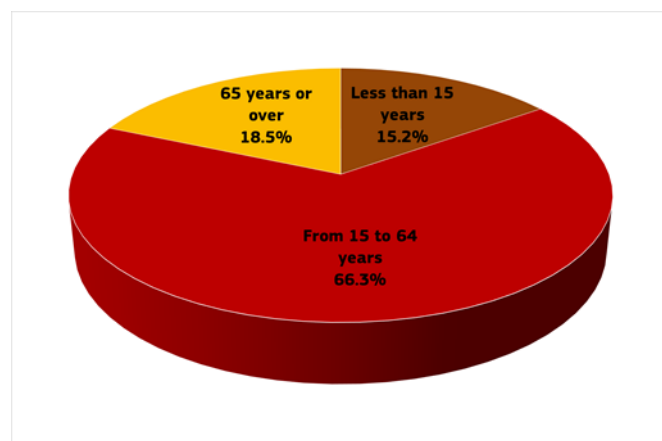
	Total Population	Change (%)
2015	46,443,994	-
2020	45,794,180	-1.4
2030	44,524,313	-4.2
2050	45,543,565	-2

Source: Eurostat, 2017.

Aging population

In 2015, Spain's **working age population** accounted for 66.3% of its total population, exceeding the EU-28 average of 65.6%⁵ (Figure 6). However, the working population is expected to decrease to 65.5% by 2020, further dropping to 53.4% by 2050. In parallel, the proportion of elderly people will increase from a current 18.5% to 33.4% by 2050.

Figure 6: Population in Spain by age groups in 2015 (%)



Source: Eurostat, 2017.

Fiscal policy

In 2015, **government deficit** accounted for 5.1% of Spain's GDP, compared to 6% the previous year and 7% in 2013. **Government spending** has been decreasing, reaching 43.8% of GDP in 2015 (compared to the highest of 48.1% in 2012). This number, however, is still much higher than pre-crisis level of 38.9% in 2007. **Central government debt** accounted for 99.8% of GDP in 2015, 0.6 percentage points below the 2014 level but 64.3 points above 2007 (at 35.5%).

Entrepreneurship

Spain ranked 85th (out of 189) in terms of **starting a business** in 2016, according to the Doing Business 2017 Report⁶, 6 positions below the ranking achieved in 2015 (79th). Registering a firm takes 7 procedures and 13 days, considerably above the OECD high income average (4.8 procedures and 8.3 days). Furthermore, the cost of starting a business represents 5% of income per capita, compared to the 3.1% OECD high income average, while the paid-in capital for a new firm was set at 12.9%, again considerably higher than the respective OECD average (9.2%)⁷. However, Spain has made important progress since 2007, when it took 60 days, 10 procedures and a cost of 15.1% of income per capita to start a business.

In addition, Spain's Small Business Act highlights its positive performance in "Second chance" and "Internationalisation", above or in line with the EU average. However, Spain is lagging behind in the "State aid and public procurement", "Access to finance" and "Entrepreneurship" dimensions⁸.

Access to finance in the national economy

Spain fares slightly below average in terms of **financial market development**. With a score of 4 out of 7, it ranked 71st out of 138 in the Global Competitiveness report 2016-2017⁹, 20 positions above the figures registered in 2014-2015 (91st). Venture capital availability (41st) has considerably improved since 2014 (100th) becoming the best score in Spain and followed by the affordability of financial services (58th). However, despite improvements, ease of access to loans and financial services meeting business need are still an issue, placing the country at the 88th and 83rd place, respectively¹⁰.

All indicators regarding financial market development have improved since 2014, in line with the recovery of the overall economy. However, further efforts are needed regarding the amounts of loans advanced to Spanish resident non-financial corporations, which have been decreasing steadily over the past years. In 2015, these amounted to EUR 925.1 billion, 8.35% lower than in 2013 (EUR 1,009.4 billion).

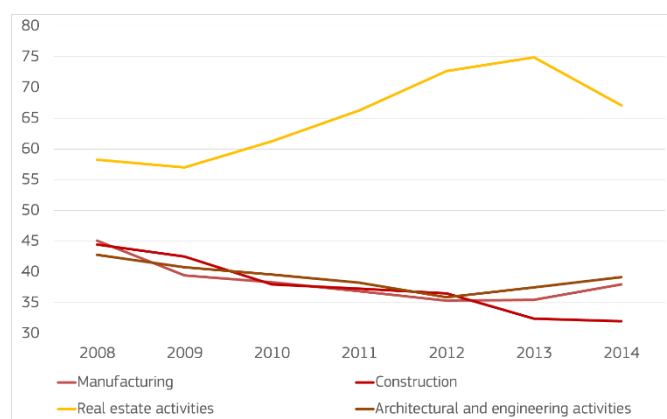
Access to finance is being supported by the investments from the European Investment Fund (EIF). In Spain, the EIF manages the "SME Initiative", which entails an innovative use of Structural and Investment Funds (ESIF 2014-2020). In total, the EIF expects to mobilise EUR 3.9 billion in guarantees and securitisation in the coming years, EUR 2.9 billion in Equity and EUR 78.1 million of microfinance to support Spanish SMEs¹¹.

3. Key economic drivers of the construction sector

Productivity

Labour productivity in Spain has been declining for most of the construction sub-sectors since 2008. Narrow construction, manufacturing and architectural services have been dropping by 28.1%, 15.7%, and 8.4% over 2008-2014, respectively. Conversely, real estate activities have shown the opposite trend, increasing productivity by 15.1% since 2008. Labour productivity in real estate reached EUR 67,100 in 2014, doubling narrow construction (EUR 32,000) and well above the other two sub-sectors (Figure 7).

Figure 7: Labour productivity in the construction sector in Spain over 2008-2014 (EUR k)

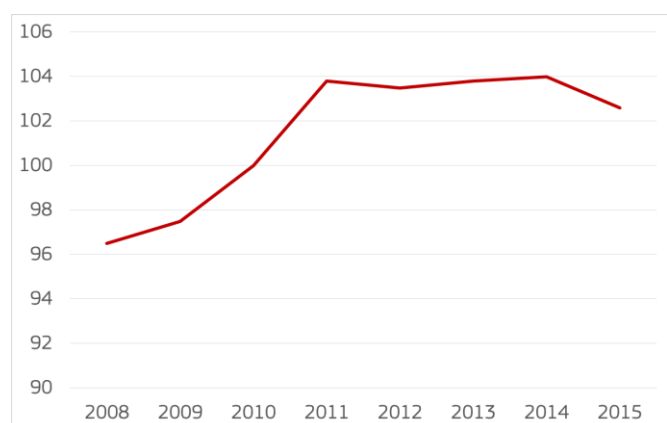


Source: Eurostat, 2017.

Profitability

The **turnover of the broad construction sector** in 2015 amounted to EUR 172.3 billion, 60.9% lower than in 2008 (EUR 441.1 billion). This drop was particularly pronounced in the construction (-69.3%) and manufacturing sub-sectors (-56.5%). Moreover, the gross operating surplus of the broad construction sector in Spain has been sharply decreasing since 2008, falling by 64.7% to EUR 21.8 billion in 2014. This is explained by sharp changes in demand, decrease of turnover and increase of construction costs. The gross operating rate of the broad construction sector¹², which gives an indication of the sector's profitability, was 13.5% in 2014, 0.5 percentage points below the 2008 value (14.0%). In parallel, the cost of construction for residential buildings has increased slightly during 2008-2014 (+6.32%), in line with the 4.4% rise in input prices for materials and a 9.7% increase in labour costs (Figure 8).

Figure 8: Construction cost index for residential buildings over 2008-2015 (2010=100)

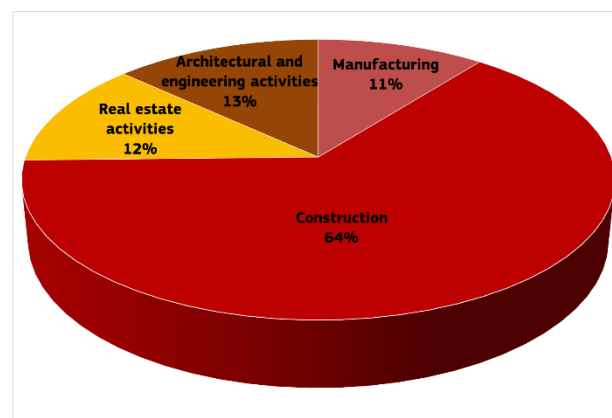


Source: Eurostat, 2017.

Employment

The number of people employed in the broad construction sector has been declining since 2008, reaching 1.6 million in 2014, 47.4% lower than in 2008 (3.1 million). This decline was mirrored to a certain extent in all construction subsectors, varying from 14.5% for real estate activities to 54.6% for manufacturing and 52.8% for narrow construction, which employed 63% of the construction workforce (Figure 9). In terms of **employment by specific occupation**, the number of craft and related trades workers in narrow construction amounted to 676,400 in 2015, a 56.2% decline since 2008 (1.5 million), being the largest occupation. Similarly, elementary occupations dropped by 74.2% over the same period, from 318,900 to 82,200. Technicians and associate professionals were the largest occupation in real estate activities in 2015, amounting to 58,900, though 7% lower than 2008 (63,300). Conversely, clerical support workers experienced a 28.3% increase over the same period, from 21,900 to 28,100.

Figure 9: Percentage of people employed by construction sub-sectors in Spain in 2015



Source: Eurostat, 2017.

The number of **self-employed people** in the narrow construction sector as share of total self-employed persons in the general economy decreased from 15.3% to 11.3% between 2008 and 2015, reaching 328,300 professionals in 2015. Conversely, the number of self-employed persons in real estate activities has recovered rapidly from the crisis, reaching 40,600 self-employed in 2015 (1.4% of the total self-employed persons), a decrease of 10.2 percentage points compared to 2008.

According to the Association of Self-employed Professionals (*Unión de Profesionales y Trabajadores Autónomos* - UPTA), the decline observed during the period 2008-2013 can be explained by the paralysis in residential construction

following the crisis, which offered most of the employment opportunities for self-employed carpenters, plumbers and electricians¹³. Conversely, large public infrastructural works provide few benefits and prospects for this category of workers, since they are not labour intensive and are typically monopolised by larger companies¹⁴.

The share of people employed by SMEs in the broad construction sector in Spain has remained stable since 2008. In 2014, 87.3% of the total workforce of the broad construction sector was employed by SMEs, highlighting the important role played by SMEs in terms of employment in the sector.

Business confidence

Business confidence has generally been improving in Spain since 2008, with the **consumer confidence** indicator increasing from -33.7 to -3.9 in 2016, reflecting a positive consumer market attitude. Similarly, the **industry confidence** indicator increased from -18 in 2008 to -2.2 in 2016, evidencing a better business climate in the country. The **construction confidence** indicator reflected the structural changes of the market in two stages, falling significantly in 2008-2010 to -29.7 and then dropping further to -55.5 in 2011-2013. However, it improved in 2016, reaching -39.3 and suggesting the slow recovery of the sector. In parallel, the **investment ratio** declined from a height of 29.6% in 2007 to 21.3% in 2016. Similarly, **investment per worker** dropped by 15.5% between 2008 and 2009, from EUR 73,200 to EUR 61,800. It subsequently recovered, reaching EUR 97,800 in 2014, 33.6% above the 2008 value.

Domestic sales

The ranking of the **most domestically sold construction products** has generally remained constant in Spain between 2009 and 2015, with the exception of the group “Windows, French windows, etc.”, replaced by “Prefabricated buildings of metal”. Overall, sales have experienced a significant decrease in value over this period. For instance, the value of domestic sales of “ready-mixed concrete” has decreased by 68.6%. On the contrary, the value of “prefabricated buildings of metal” experienced an 8.2% increase during that period, becoming the most domestically sold construction product. The top 5 most domestically sold construction products, both in Spain and the EU, are summarised in Table 3. Together, these made up 47.8% of all Spanish construction product sales in 2015.

Table 3: 5 most domestically sold construction products in Spain and in the EU in 2015

	Spain			EU-28
	Product	Value (EUR m)	Share in construction product domestic sales (%)	Product
1	Prefabricated buildings of metal (group 251110)	1,055.1	11.1	Other structures (group 251123)
2	Doors, windows etc. (group 251210)	981.0	10.3	Ready-mixed concrete (group 236310)
3	Ready-mixed concrete (group 236310)	906.2	9.5	Doors, windows etc. (group 251210)
4	Portland cement, aluminous cement, etc. (group 235112)	825.2	8.7	Prefabricated buildings of metal (group 251110)
5	Prefabricated structural components (group 236112)	757.0	7.8	Prefabricated structural components (group 236112)

Source: PRODCOM, 2017.

Export of construction-related products and services

Table 4 presents the top 5 **most exported construction products**, both in Spain and in the EU. These accounted for 62.8% of all construction exports from Spain in 2015. To be noted that, between 2009 and 2015, the values of the exports of “Articles of cement, concrete or artificial stone” and “Ceramic tiles and flags” have increased by 129.3% and 46.7%, respectively. The country is a global exporter of infrastructural services and expertise, ranging from airports, railways and highways, to construction of solar power plants¹⁵.

Table 4: 5 most exported construction products in Spain and in the EU in 2015

	Spain			EU-28
	Product	Value (EUR m)	Share in construction product exports (%)	Product
1	Ceramic tiles and flags (group 233110)	2,464.2	39.1	Ceramic tiles and flags (group 233110)
2	Other structures (group 251123)	465.7	7.3	Other structures (group 251123)
3	Other worked ornamental or building stone and articles thereof (group 237012)	429.7	6.8	Fibreboard of wood or other ligneous materials (group 162114)
4	Articles of cement, concrete	318.9	5.1	Marble, etc. (group 237011)

	Spain			EU-28
	Product	Value (EUR m)	Share in construction product exports (%)	Product
	or artificial stone. (group 236919)			
5	Fibreboard of wood etc. (group 162114)	277.0	4.4	Doors, windows etc. (group 251210)

Source: PRODCOM, 2017.

In terms of **cross-border provision of construction services**, Spain exported EUR 1,498 million worldwide in 2014¹⁶. Specifically, 17.4% of exports (EUR 260 million) were made to the EU-28. Conversely, the **value of exports to countries outside the EU-28** amounted to EUR 1,238 million in 2014. In parallel, Spain **imported** a total of EUR 139 million in construction services in 2014, with EUR 60 million from EU-28 countries (i.e. 43.2% of imports). Spain therefore achieved a **trade surplus** of EUR 1,359 million in 2014.

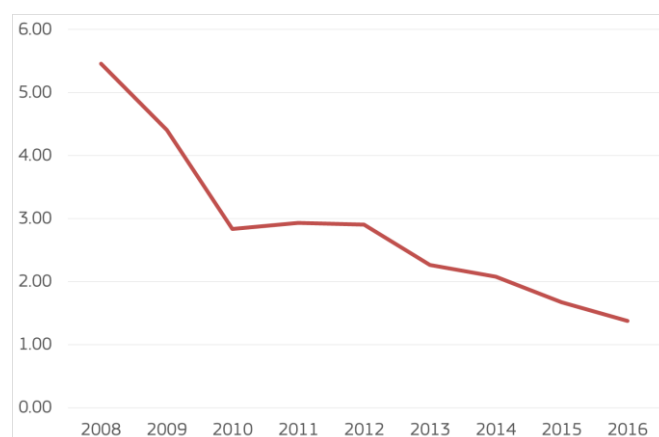
Access to finance in the construction sector

The economic crisis has affected the ability of Spain's construction sector to access loans and other sources of finance. The total volume of **loans to construction sector** in Spain has been drastically decreasing, reaching EUR 43.9 billion in 2015, 61.6% less than in 2010 (EUR 114.5 billion). This indicates difficulties for construction industry (and for most SMEs in the Spanish economy) to obtain credit and access the financial market.

Access to housing

The **number of households** has been steadily growing, reaching 18.4 million in 2015, a 7.7% increase since 2008. More than half of the Spanish population (55.7%) lived in cities and greater cities in 2014, relatively stable since 2010. In parallel, the annual mean equivalised net income decreased by 4.8% between 2008 and 2015, reaching EUR 15,408. This decrease affected the amount of residential loans in Spain, which reached EUR 562.8 billion in 2015, 16.6% less than in 2008. This comes despite the decreasing mortgage rates, which declined from 5.5% in 2008 to 1.4% in 2016 (Figure 10).

Figure 10: Mortgage rates for loans for over 5 years original maturity (%)



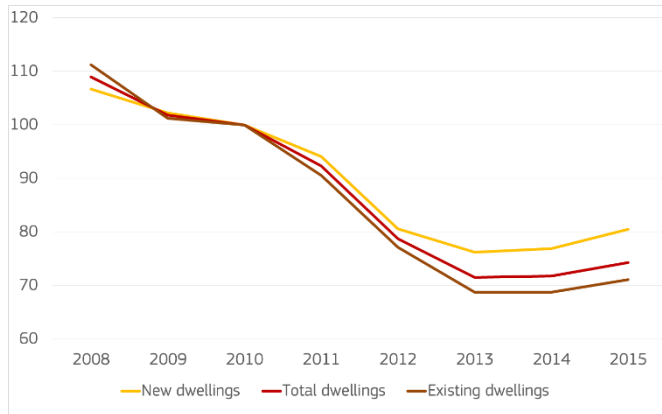
Source: ECB MFI Interest Rate Statistics, 2017.

Spain experienced one of the highest **price increases** prior to the economic crisis, with house prices rising by 197% over 1996-2007, resulting in a housing bubble¹⁷. Construction activities were also buoyant during the early 2000s, with 580,000 dwellings built annually between 1998 and 2007¹⁸, with a record of approximately 750,000 in 2006.

The housing bubble exploded in 2008 together with the economic crisis, leading to a dramatic decrease in housing prices and construction activities. The **house price index** dropped by 31.8% over 2008-2015, with the index for existing and new dwellings falling by 36.1% and 24.5%, respectively. The number of dwellings built annually also decreased drastically, averaging 75,000 during the period 2007-2014¹⁹.

However, this downward trend is now starting to recover, as the house price index increased by 0.3% in 2014 and 3.6% in 2015 after six years of continuous decrease (Figure 11). Residential construction activities also picked up in 2014 after years of reduced activity. In 2014, the number of dwellings built increased minimally (+0.1%) compared to 2013, and reaching a total of 33,640 new buildings, far from the 663,430 dwellings built in 2007. In fact, only 688,040 dwellings were built between 2008 and 2014, less than the peak registered in 2006.

Figure 11: House price index in Spain over 2008-2015 (2010=100)



Source: Eurostat, 2017.

At the same time, the Spanish housing market is characterised by a high rate of **home ownership** and less developed rental sector. As result, the majority of the population owned its dwelling in 2015 (78.2%), whereas only 21.8% were tenant, out of which 9.1% rented the dwelling at reduced price or free. However, the demand for housing is expected to increase in the years to come, and the need for additional housing has been estimated at 140,000 annually until 2024.

Despite the decrease of housing prices, some **housing affordability issues** remain due to the high unemployment rate. This is reflected by the housing cost overburden rate²⁰, which has not suffered major changes and that stands at 10.3% in 2015, slightly below the EU-28 average of 11.3%²¹. Several actions are being adopted by the government to address the housing shortage and the issue of affordability and renting (see Policy schemes).

In addition, housing quality in Spain is good, with the **overcrowding rate**²² in 2015 being at 5.5%, below the EU-28 average of 16.7%²³. Similarly, the severe housing deprivation rate²⁴ reached 1.5% in 2015, below the EU-28 average of 4.9%²⁵.

Infrastructure

Spain ranks 12th for the quality of its infrastructure, according to the Global Competitiveness report 2016-2017²⁶. More specifically, it ranks 8th for its rail infrastructure and 14th for the quality of air transport infrastructure. Conversely, the overall quality of its infrastructure ranks comparatively lower (17th), with road infrastructure also ranking 17th. Generally, the infrastructure of Spain has been improving since 2008, registering an

continuous increase in road density (+11.1%) and seaport capacity (4.2%) between 2008 and 2014.

4. Key issues and barriers in the construction sector

Company failure

Within the narrow construction sector, the number of **company deaths** decreased by 60% between 2008 and 2014, from 102,158 to 40,890. In parallel, the number of new companies created declined by 26.1% between 2008-2012, and started to recover from that year, reaching 43,334 company births in 2014, -5.7% compared to 2008 values. Similarly, the **company births** in 2014 in the real estate sub-sector increased by 27.5% compared with the 2008 values. On the other hand, the number of company deaths decreased by 43.1% during the same period. The architectural/engineering sub-sector experienced a similar trend, with a 38.9% increase in company births and a 13.4% decrease in the number of company deaths.

In addition, 2014 represented a turning point, as the number of companies created exceeded the number of companies that terminated their operations for all sub-sectors, indicating a gradual stabilisation of the business demography within the broad construction sector.

Trade credit

In Spain, 42.8% of the total **value of B2B sales** was transacted on credit in 2016, slightly above the average for Western Europe (41.2%). However, this represent a 6.5% decrease compared to 2015 (49.3%). Specifically, 47.3% of the total value of domestic and 38.3% of the foreign B2B sales were made on credit, compared to the EU average of 44.8% for domestic and 37.7% for foreign B2B sales, highlighting the higher perceived risk associated with foreign transactions.

The importance of **trade credit** in the Spanish economy as a whole is relatively high compared to other sources of financing, being equivalent to 33% of the GDP in 2014²⁷. It is more widespread among SMEs, both in terms of credit granted and received, particularly in the wholesale/retail trade, accommodation and food industries.

Late payment

Around 87% of Spanish respondents to the Payment Practices Barometer 2016²⁸ survey experienced late payment of invoices by B2B customers over the past year.

Payment terms extended to B2B customers averaged 49 days from the invoice date, significantly above the average for Western Europe (31 days). This is explained by the important share of payment transactions averaging more than 60 days of delay (27.5%), whereas only 48% of recorded payments averaged a payment term of less than 30 days²⁹. Furthermore, it is observed that companies in the north of Spain tend to have a better average payment period than those located in the south of the country³⁰.

Within the general economy, the Spanish construction sector displays the highest levels of late, averaging 2 months from invoicing. The main reasons for late payments include unavailability of funds (59.5%), buyer using outstanding debts/invoices as a form of financing (27.4%) or formal insolvency of the buyer (24.7%)³¹.

In 2015, the average **supplier payment period** for large construction and real estate enterprises was considerably higher than for SMEs, peaking at almost 240 days in 2010, but subsequently decreasing to 160 in 2013³². Public administrations reported the longest payment delays, with an average of 103 days, still considerably above the 30-day target set by the Late Payment Directive (2001/17/EU), which came into force in Spain in 2013³³. Namely, the average **delays from public administrations to self-employed workers** has increased from 83 days in September 2015, to 86 in January 2016, with regional governments reaching 101 days³⁴.

Time and cost of obtaining building permits and licenses

Spain ranked 113th in 2016 in “Dealing with construction permits”, faring worse than the previous year (111th). Building a warehouse requires 13 **administrative procedures** (slightly above the OECD high-income average of 12.1) and takes 205 days (above the 152.1 average) (Table 5)³⁵. The estimated cost is approximately 5.2% of the warehouse value, higher than the average of 1.6%. Namely, **obtaining the building permit** takes 45 days and costs EUR 46,535. Once the building is completed, it takes 3 days to obtain the **completion certificate**, at a cost of EUR 204, and another 60 days for the occupancy permit (free of charge). Requesting and obtaining water connection requires 10 days and costs EUR 1,200.

Table 5: Construction procedures timing and costs in Spain

Procedure	Time to complete	Associated costs (EUR)
Request and obtain the official	14 days	EUR 186

alignment (<i>alineamiento oficial</i>)		
Request and obtain a certificate of compliance (<i>certificado de conformidad</i>)	60 days	EUR 5,902
Obtain approval of draft project proposal and implementation plan (<i>Visado del proyecto básico y proyecto de ejecución</i>) from College of Architects of Madrid	3 days	EUR 1,155
Request and obtain a building permit (<i>licencia de obras</i>)	45 days	EUR 46,535
Notify labor authority of the start of construction (<i>apertura del centro de trabajo</i>) at the Ministry of Employment, Tourism and Culture	1 day	no charge
Receive initial inspection	1 day	EUR 375
Obtain completion certificate (<i>visado del certificado final de obra -CFO</i>) from College of Architects of Madrid	3 days	EUR 204
Request final inspection in connection with the occupancy permit (<i>licencia de primera ocupación y funcionamiento</i>)	1 day	EUR 3,601
Receive final inspection	1 day	no charge
Obtain occupancy permit (<i>licencia de primera ocupación y funcionamiento</i>)	60 days	no charge
Register the new building	18 days	EUR 1,231
Request and obtain water connection	10 days	EUR 1,200
Register the new building at the Cadastre	1 day	no charge

Source: Doing Business overview for Spain, World Bank, 2017.

Skills shortage

The number of **job vacancies** in the construction sub-sector decreased from 8,378 to 2,286 (-72.7%) between 2009 and 2013, due to the impact of the economic crisis. In 2015, the number of job vacancies reached 2,572, far from pre-crisis levels. On the contrary, the number of vacancies in the real estate sub-sector has increased by 21.4% during the same period of time, from 337 in 2009 to 409 in 2015.

Adult participation in education and training in the construction sub-sector has remained stable at around 6%-

8% during the period 2009-2015. On the contrary, the real estate sub-sector has experienced some fluctuations, from 13.6% in 2009 to 6.5% in 2010, and subsequently recovered reaching a peak of 14.2% in 2013. In 2015, participation in education and training was 6.4% for narrow construction and 9.2% for real estate activities. **Tertiary education students in engineering, manufacturing and construction** has increased by 34.7% since 2009, reaching 68,592 students and highlighting the increasing interest of students in construction and engineering activities.

According to the Spanish Labour Foundation for Construction (*Fundación Laboral de la Construcción* – FLC), only 30% of Spanish construction workers received appropriate training, compared to the average of 60% across other industries³⁶. Indeed, the construction sector had traditionally been one of the main employers of relatively low-skilled workers, particularly the youngest aged 15-24 educated below upper secondary education³⁷. Many of these, currently unemployed, will need to be retrained.

Recent developments in national and EU legislation are pushing for the creation of new skills to meet energy efficiency and sustainability requirements. Namely, priority skills identified in this respect include joint sealant operators, PVC and aluminium metalwork assemblers and environmental/quality control technicians, but also builders, plumbers, electricians, and heating/air conditioning/gas/insulation installers³⁸. The development of such skills within the workforce requires a gradual adaptation of the current **Vocational Education Training (VET) system**. To this end, the national Organic Law 4/2011 amends previously existing laws that regulate VET in Spain, aiming to improve the adaptability of vocational training to the changing needs of the labour market. The Law is further supported by the Royal Decree 1147/2011, which sets the framework for a more flexible and better-integrated VET³⁹.

Sector & sub-sector specific issues

Material efficiency and waste management

According to a recent report by the Spanish Federation of Construction and Demolition Waste (*Federación Española de Gestores de Residuos de Construcción y Demolición* – FERCD), 154.6 million tonnes of C&D waste were produced in Spain between 2009 and 2013. The autonomous regions of Catalonia, Andalucía, Madrid, and Valencia reported the highest levels of C&D waste production. Overall, **C&D waste generation** decreased by almost 56% over this

period, from 45.7 to 20.2 million tonnes, with a stabilisation occurring between 2012 and 2013⁴⁰.

The general decline in C&D waste production can be ascribed to the significant decrease in construction activities following the crisis, but also goes in parallel with the increased recycling rate over the analysed period. Namely, this went from 32% in 2009 to 37.9% of the total C&D waste generation in Spain in 2013. In addition, the proportion of uncontrolled C&D waste has also dropped between 2009 and 2013, from 55% to 35% of the total production, respectively⁴¹. These figures highlight the improvements in waste management and monitoring in the Spanish construction sector, in compliance with the 40% recycling target for 2015 set by the Construction and Demolition Waste National Plan 2008-2015 (*Plan Nacional de Residuos de Construcción y Demolición*)⁴². However, the current **recycling rate** is still considerably below the 70% target for 2020 set by the EU Waste Framework Directive. In this respect, the new State Waste Prevention Programme (*Programa Estatal de Prevención de Residuos 2014-2020*) and its specific focus on R&D, will play an important role in achieving the EU recycling target⁴³ (see Innovation in the construction sector).

Climate and energy

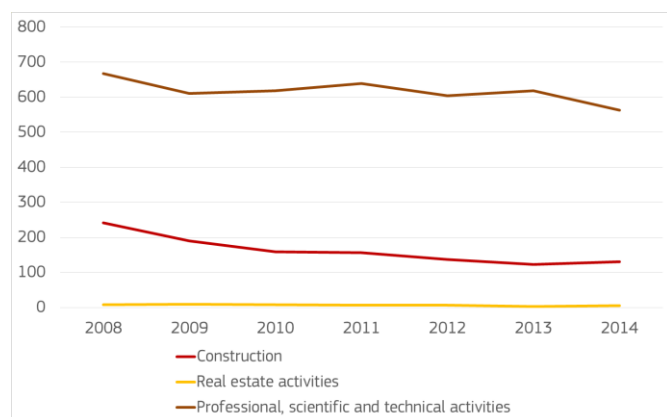
Emissions of greenhouse gases (carbon monoxide and dioxide, methane, nitrous oxides and particulate matter) from activities in the construction and real estate sub-sectors amounted to 1.06 million and 147,706 tonnes in 2014, respectively. The former have decreased by 56.3% since 2008, whereas the latter have experienced a minor 4% increase.

5. Innovation in the construction sector

Spain's overall performance in terms of innovation and R&D expenditure is below the EU average, classifying the country as a **Moderate Innovator**, according to the Innovation Union Scoreboard 2016⁴⁴. Spain's gap with the EU has increased overtime, with its performance relative to the EU falling from 77% in 2008 to a record low of 69% in 2015. In addition, Spain experienced a negative average annual growth rate of innovation performance, falling by 0.8% between 2008 and 2015. It has worsened particularly with respect to the Venture capital investments indicator (-11%) and non-R&D innovation expenditures (-7.9%).

This situation is reflected in the construction sector by the **business enterprise R&D expenditure (BERD)**, which has displayed a negative trend across all sub-sectors between 2008 and 2013, and started to recover from 2014 (Figure 12). R&D expenditure in the Professional, scientific and technical activities, construction and real estate sub-sectors amounted to EUR 653.1 million, 130 million and EUR 5.3 million in 2014, respectively. In particular, R&D expenditure in the construction sub-sector has declined by over 46.3% since 2008 (from EUR 241.9 million to EUR 130 in 2014), suggesting budget cuts on innovation activities. Similarly, R&D expenditure in the real estate sub-sector has dropped by almost 26.5% (from EUR 7.3 million in 2008 to EUR 5.3 million in 2014), and represents the lowest BERD within the broad construction sector. Conversely, companies in the professional and technical activities sub-sector, such as engineering and architecture, displayed the highest level of investment in R&D (EUR 653.1 million in 2014), which was however 15.7% lower than in 2008 (EUR 667.7 million).

Figure 12: Business enterprise R&D expenditure (BERD) per construction sub-sector in Spain over 2008-2014 (EUR m)



Source: Eurostat, 2017.

In parallel, the total **R&D personnel** (full-time equivalents – FTE) in the construction sub-sector reached 1,777 in 2014, i.e. 55.6% lower than the pre-crisis level (4,004). The number of FTE in the real estate sub-sector also declined (–34.3%), reaching 67 in 2014. On the other hand, the professional and technical activities sub-sector reported the largest number of R&D FTE, with a slight increase (+2.4%), from 8,345 in 2007 to 8,548 in 2014. The generally low focus on innovation in the Spanish construction sector is also highlighted by the 36.2% drop in the number of **construction-related patent applications**, which fell from 94 in 2008 to 60 in 2016.

However, four Spanish construction-related firms ranked amongst the top 1,000 EU companies by R&D (industrial sector ICB-3D). The highest-ranking Spanish Construction and Materials (C&M) company (position 152), spent EUR 180.4 million on R&D in 2015/2016, with an annual R&D investment growth rate of 3.1%⁴⁵.

Steps forward have been made in recent years through the opening of several **construction innovation centres** across the country. In 2015, the Spanish Labour Foundation for Construction acquired ownership of the *Badalona training centre* in Catalonia, which will become a benchmark for innovation, particularly regarding construction materials, the application of the Building Information Modelling (BIM) technology and training in new construction products and techniques (e.g. lean construction). This will be achieved through tight partnerships with industry (e.g. construction material companies)⁴⁶. Another instance is the *Sustainable Construction Innovation Centre*, which was granted EUR 1.4 million in October 2014 for the construction of new facilities, through a public-private partnership with the Andalusian regional government⁴⁷.

At national level, *BuildingSMART* Spanish Chapter is a non-profit association which aims to promote efficiency in the construction sector through the use of open standards of interoperability based on BIM, in order to reduce the costs and time while increasing the quality. The association is composed by different agents of the construction sector, such as promoters, investors, developers, manufacturers and universities⁴⁸.

According to the *National Construction Confederation* (*Confederacion Nacional de la Construcción* – CNC), larger Spanish construction companies are very active in technological R&D, which is an essential part of their competitiveness strategy. Investments in R&D are also observed in some smaller firms, although in general the R&D situation for SMEs is still suboptimal. To this end, the *Spanish Technology Construction Platform* (*Plataforma Tecnológica Española de Construcción* – PTEC) brings together companies, associations, research and technology institutes to promote R&D and innovation in the construction sector and particularly among SMEs⁴⁹.

Innovation in the construction sector will also be supported by the new *State Waste Prevention Programme* (*Programa Estatal de Prevención de Residuos 2014-2020*), which recognises the importance of R&D projects in the minimisation and management of C&D waste⁵⁰. The Programme foresees the involvement of Public Administrations in promoting R&D projects aiming to:

- develop selective demolition techniques to facilitate reuse of waste;
- develop tools to assess the environmental performance of construction products and their possible reuse.

Finally, the Spanish government approved a package of measures to support research, development and innovation, for a total investment worth EUR 730 million⁵¹. Namely, the initiative that received the largest support (EUR 586 million) was the R&D call “*Challenge-Collaboration*” (*Retos-Colaboracion*), included in the State Plan for Scientific and Technical Research and Innovation 2013-2016 (*Plan Estatal de Investigación Científica y Técnica*) and co-financed by the European Regional Development Fund (ERDF). This call aims to stimulate R&D through the financing of innovative projects and promoting the creation of innovative companies, fostering the development of new technologies while contributing to improve the competitiveness of the business fabric⁵².

6. National & Regional Policy & Regulatory Framework

Policy schemes

The Spanish government’s construction policy schemes are centred on **social and territorial cohesion, economic competitiveness and sustainability**⁵³.

Following these principles, the strategy has two axis related to the construction sector⁵⁴. The first one consists in **orienting infrastructure, transport and housing policies to support economic growth and employment**. The second axis is to **ensure territorial balance and cohesion between the different communities through tailored investment** and funding according to the specific needs of the various areas.

In Spain, the *Working Group for Rehabilitation* (*Grupo de Trabajo sobre Rehabilitación*) presented an action plan for a new housing sector to boost employment, fiscal, social and economic impacts by maximising the renovation budget⁵⁵. To do so, the government should facilitate **private investment in renovation**. The second recommendation is to place a tangible value on CO2 reductions and minimise the risk related to renovation investments. The Working Group for Rehabilitation placed renovation as a strategic aspect to build a New Housing Sector⁵⁶, aiming to improve the quality and sustainability of the buildings and enhance their accessibility⁵⁷. According to the private organisation Building Performance Institute Europe (BPIE)⁵⁸, the Spanish

renovation strategy includes a good technical evaluation of the building stock and identifies good energy saving opportunities.

The *State Housing Plan 2017-2020* (*Plan Estatal de Vivienda 2017-2020*) is currently under preparation and will be focused on boosting housing rental aids and facilitating quick access to the enjoyment of “decent and adequate” housing for those with financial difficulties⁵⁹. The previous State Housing Plan for the period 2013-2016⁶⁰ is still ongoing and has been divided into seven different programmes⁶¹:

- **Subsidies of agreed loans**⁶² in order to maintain the subsidies for agreed loans regulated in previous State Housing Plans that comply with the current legislation;
- **Aid for rental housing**⁶³ to facilitate the access and permanence in a house rented to population groups with limited economic means. This programme supports up to 40% of the annual rent, with a limit of EUR 2,400 per year;
- **Promotion of the public housing stock for rent**⁶⁴ to develop a public building stock with a reduced rent including new and existing dwellings, with a financial support up to 30% of the transaction or EUR 22,500 per dwelling;
- **Promotion of building rehabilitation**⁶⁵ to support the financing of the execution of works and maintenance in the common elements and common spaces of apartment buildings, financing up to 35% of the cost of the intervention;
- **Promotion of urban renewal and regeneration**⁶⁶ to improve residential fabrics and functionally recover historic settlements, urban centres, degraded neighbourhoods and rural centres, by financing up to 35% of the cost of the intervention;
- **Support to the implementation of the evaluation report of the buildings**⁶⁷ to support the use of evaluation reports, which include the analysis of the conditions of accessibility, energy efficiency, and state of conservation. The maximum financing amounts to EUR 20 per dwelling within the building and EUR 500 per building (or up to 50% of the cost of the report);
- **Promotion of sustainable and competitive cities**⁶⁸ proposing financial support for projects related to the improvement of neighbourhoods, renovations of the historic downtown, insalubrious building renovation, out-of-date area renovation, sustainable and tourist areas. The targeted

beneficiaries are the local administrations and the property owner associations. The support can represent **40%** of the transaction cost.

Insurance and liability related regulations

The *Law of Construction Order*⁶⁹ (*Ley de Ordenación de la Edificación*) governs **liability in construction** with the purpose of protecting the final users against delay and insolvency of property developers⁷⁰. It introduced three different durations of liability⁷¹. For all of them, the starting point is the handover of the completed building:

- One year for material disorders resulting from an incorrect work (for sub-contractors only);
- Three years for damages (*ruina humana*) affecting the use of the building as residential dwellings (for all participants in the construction process);
- Ten years for material damages (*ruina material*) affecting the structure (for all participants in the construction process).

If the cause of the damage or the individual responsibility cannot be determined, the participants can be jointly and severally liable. The property developer is jointly liable with all the other parties. Legal actions must be initiated within the two years after the date when the damage occurs⁷².

The liability durations are different for public sector contracts. As for private sector contracts, the handover is the starting point for the duration.

- 15 years for damage of the work resulting from a contract breach (for the building contractor);
- 10 years for damages resulting from defective design (for professional consultant).

Three different insurances⁷³ are required and correspond to the three different liabilities.

- One year insurance taken out by the building contractor and covering a minimum of 5% of the building work value;
- Three years insurance arranged by the property developer (minimum 30% of building work value);
- Ten years insurance taken out by the property developer (minimum 100% of building work value).

Building regulations

The *Building Technical Code* (*Código Técnico de la Edificación*) lists the basic security and habitability requirements. It details the main regulations and legislation in the construction sector⁷⁴, and covers (amongst others) mandatory requirements for accessibility, user protection

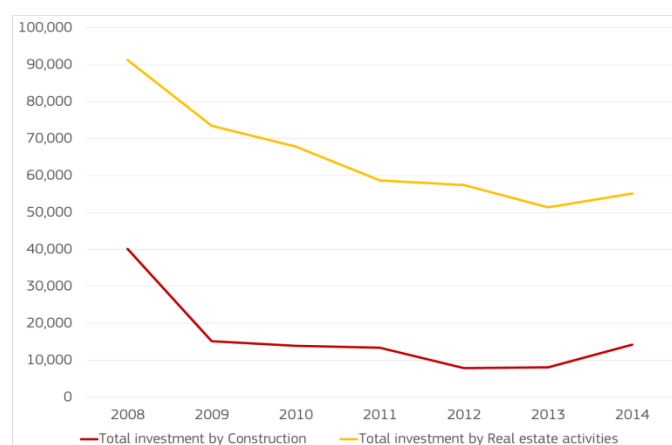
and sustainability. In terms of energy use specifically, the Code details requirements and measures to reduce the energy demand and consumption of buildings, defines the performance of thermal installations, sets the minimum share of solar energy for hot water generation and the minimum contribution of photovoltaic energy in electricity production⁷⁵. With the Building Technical Code, all construction stakeholders are bound to use the technical norms. The local administration manages the urbanism regulation and housing planning, whereas the national authority is responsible for regulating dwellings rents⁷⁶.

7. Current Status & National Strategy to meet Construction 2020 Objectives

TO 1 - Investment conditions and volumes

Total **investment by the broad construction sector**⁷⁷ has experienced a significant decline since 2008, with investments by the construction and real estate sub-sectors dropping by 64.6% and 39.6% between 2008 and 2014, respectively, reaching EUR 14.2 billion and EUR 55.2 billion, respectively (Figure 13). In terms of **investment in intangible assets**, the construction sub-sector invested EUR 285 million in intellectual property products in 2015, whereas the real estate sub-sector invested EUR 2.4 billion million, the highest value since 2000.

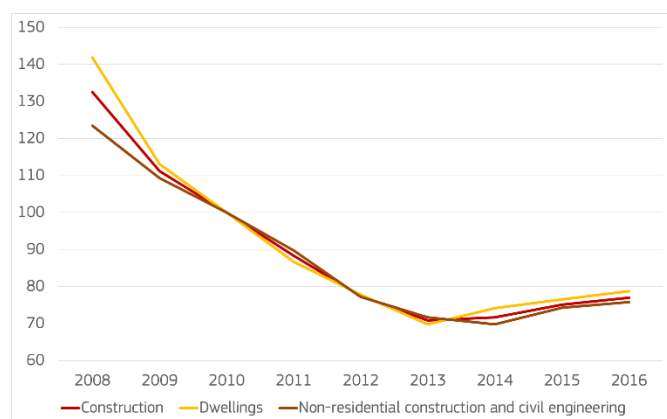
Figure 13: Investment by the Spanish broad construction industry between 2008-2014 (EUR m)



Source: Eurostat, 2017.

Total **investment in construction**⁷⁸ has experienced an important downward trend due to the economic crisis, declining by 46.6% between 2008 and 2013 and, though on the recovery path since then, it was still 41.9% lower than 2008 in 2016 (Figure 14). Investment in dwellings experienced the hardest hit, dropping by 50.8% over 2008-2013 and starting to pick up since 2014, but still being 44.4% below the 2008 levels in 2016. Similarly, investment in non-residential construction and civil engineering declined by 41.9% over 2008-2013, and although it started recovering as of 2014, it was still 38.6% lower than 2008 in 2016. Public finance austerity over these years is one of the reasons for this decrease⁷⁹. In absolute terms, investment in the construction sector totalled EUR 100.1 billion in 2014, out of which EUR 45.0 billion was invested in dwellings and EUR 55.1 billion was devoted to non-residential and civil engineering⁸⁰.

Figure 14: Investment in the Spanish construction sector between 2008-2016 (2010=100)



Source: Eurostat, 2017.

Total **inland infrastructure investment** as a share of GDP declined from 1.6% in 2008 to 0.7% in 2014. Investment in rail infrastructure in Spain dropped by 66.1% between 2008 and 2014, from EUR 9 billion to EUR 3 billion, while investment in road infrastructure fell by 49.9% over the same period, from EUR 8.5 billion to EUR 4.3 billion.

Despite a 2.9% increment over 2008-2010, **household renovation spending** has seen a decreasing trend since then. Indeed, it reached EUR 4.8 billion in 2015, 17.1% below the EUR 5.8 billion registered in 2008, and accounting for 0.7% of household disposable income, slightly lower than the 0.8% recorded in 2008.

The *Ministry of Public Works* defined the new integrated planning model for infrastructure, transport services and

housing policy, established within the 2012-2024 Infrastructure, Transport and Housing Plan⁸¹. This planning model aims to set the priorities to be conducted by 2024 in these fields. Together with this plan, the Ministry also launched the *National Logistics Strategy*⁸², which aims to boost competitiveness, promote the coordination between private companies and public administration and develop optimised logistics strategies within the sector. Furthermore, the new Government has recently presented the **roadmap** for the next four years, focused development of a transport system based on mobility, the promotion a modern and efficient network of infrastructure, and the creation of a digital agenda for infrastructure and transport⁸³.

The **use of European funds** is a key element for the development of infrastructure in Spain. In 2016, Spain was the biggest recipient of EIB financing, benefiting 112 projects for a total amount of EUR 11.5 billion, out of which EUR 1,866 million were granted to upgrading infrastructure, in particular the development of transport, energy infrastructure and urban facilities⁸⁴. Instances include the refurbishment and extension of energy distribution networks (EUR 450 million), while EUR 161 million were allocated to the improvement of the safety and capacity of 320 kilometres or roads and ports, such as the port of Barcelona⁸⁵. In addition, Spain was the EU Member State receiving the second largest amount of financing under the Investment Plan for Europe (i.e. "Juncker Plan"), with a total allocation of EUR 2.7 billion⁸⁶.

TO 2 - Skills

The latest data available indicates a decreasing trend on **early school leaving** in Spain, reaching 19.97% in 2016, according to CEDEFOP⁸⁷. This indicator remains well above the EU-average (11.1%) and the national target for 2020 (15%). However, important disparities exist among regions. In the north, regions such as the Basque Country present an early school leaving rate below the EU average, whereas other regions, particularly in the south, such as Ceuta, present an early school leaving rate of 25%⁸⁸. In order to tackle this issue, the Europe 2020 report for Spain⁸⁹ emphasises three main actions to improve the skills level:

- Introduction of a **skill-based training** in secondary schools to improve the global level of students;
- Focus on **job-relevant skills** for tertiary students to participate in the growth of emerging sectors, since employability of tertiary students is the lowest in Europe, at 68.6%⁹⁰;

- Upgrade the competencies of **low-skilled adults** with specific trainings.

In the broad construction sector, the **average level of training** is the second lowest among all industries, only above agriculture. In 2013, 45% of the workers in the sector stopped studying after compulsory school and only 17.5% went to university.

The construction sector ranks second in terms of **hours of formation**, with an average of 27.6 hours per worker and gathers 49.5% of the participants in training related to Professional Risk. However, there is still need for training among construction workers⁹¹. This is stronger for production professionals that lack green construction skills, contrary to the design professionals, who tend to have more relevant skills on this aspect.

The *Spanish Building Labour Foundation* (*Fundación Laboral de la Construcción - FLC*), a non-for-profit body aiming to promote vocational training and health & safety R&D in the national construction sector, introduced a skill training on innovative techniques and tools for energy efficiency building⁹². Furthermore, the FLC is in charge of issuing and monitoring the *Construction Professional Card* (*Tarjeta Profesional de la Construcción -TPC*), which contains information on the worker's experience in the sector, his professional qualifications and the training received. This tool contributes to the standardisation of training among construction professionals⁹³.

In 2014, the European Investment Bank granted a EUR 200 million loan to tackle education investment needs and limit the skill shortage in Spain⁹⁴. This support is aimed at students in higher education, young people looking for their first job, young entrepreneurs and education facilities and research projects. Another EUR 75 million loan was granted to Cantabria in order to finance investment in education in the region⁹⁵. Namely, the loan supports the refurbishment, enlargement and construction of educational establishments.

The European Commission granted EUR 840,000 to the Valencia region in 2013, through the European Globalisation Adjustment Fund (EGF), to support 300 workers made redundant in the manufacturing of building materials in finding new jobs⁹⁶. The funds aim to provide the redundant workforce with guidance, skills assessments, general training and retraining, individual vocational education training, promotion of entrepreneurship and incentives for setting up a business.

TO 3 - Resource efficiency / Sustainable construction

In line with the requirements of the Energy Efficiency Directive, Spain set a target of 15,320 ktoe of energy savings for the period 2014 to 2020, an objective that has increased to 15,979 ktoe according to the last revision of the methodology carried out by the European Commission⁹⁷.

The Ministry of Public Works promotes sustainable construction and urbanism with a triple dimension: economic, social and environmental. Public policies related to land arrangement and transformation have to be in line with the **principle of sustainable development**.

The *Action Plan for Energy Savings* launched in 2011 for the period 2011-2020 aims to improve the energy efficiency of the existing building stock, and focuses on thermal and lighting equipment. It aims at the renovation of 8.2 million m² per year and the replacement of 500,000 devices per year⁹⁸. This plan is managed by the *Institute for Diversification and Energy Savings*⁹⁹ (*Instituto para la Diversificación y el Ahorro de la Energía - IDAE*), a public body under the Ministry of Energy, in charge of contributing to the achievement of the objectives that Spain has in terms of energy efficiency, renewable energy and other carbon technologies.

The Green Building Council Spain developed the *VERDE methodology*, to evaluate and certify sustainable buildings according to the Building Technical Code approach¹⁰⁰.

Regional initiatives also support sustainable construction. In Andalusia, the *Sustainable construction support programme*¹⁰¹ (*Programa de impulso a la construcción sostenible*) provides property owners with financial support for works improving energy efficiency and promoting the use of renewable energies. The purpose of the programme is to support sustainable investments in construction by boosting the economy with a EUR 250 million fund corresponding to 68,000 works, focusing on the most efficient and relevant energy source, with the objective of saving 66,000 tonnes of petrol per year, and reducing the global energy bill by EUR 500 million.

TO 4 - Single Market

Public procurement transparency and competition issues constitute a hindrance towards the establishment of a **competitive construction Single Market**. The European Commission launched infringement proceedings against Spain regarding the *Spanish Law on Public Contracts*. Audits revealed post-award contract modification, mostly

concerning additional works¹⁰² until The Law on Sustainable Economy amended it in 2011¹⁰³.

In 2015, the Market and Competition National Commission (*Comisión Nacional de los Mercados y de la Competencia - CNMC*) highlighted in its report “Analysis of public procurement in Spain: opportunities for improvement from the perspective of competition” three main reasons for irregular competition practices, namely high barriers to entry, different procedures for each contracting authorities and asymmetric information and complex agency relationships¹⁰⁴. The Commission proposed the following actions to improve the public procurement process:

- Participation in the transposition of the new procurement directives;
- Coordination between the CNMC and the various contracting authorities;
- Actions related to the JCCAE¹ and the State Contracting Platform
- Training of supervisory bodies on procurement;
- Review of the rules of public procurement;
- Update the Guide to public procurement and competition.

Given that the construction sector is regulated by a broad set of national laws across different fields (public procurement, urban planning, environment, labour legislation, etc.), the CNC believes that better and easier access to information on the relevant national legislation through a single contact point would help overcome some of the regulatory barriers slowing down the implementation of a harmonised EU construction market.

In terms of cross-border provision of construction services, Spain has a horizontal authorisation scheme in place, requiring foreign providers to demonstrate that construction health and safety requirements have been complied with. Spain is the only Member State which imposes a targeted control on health and safety for the construction sector in the framework of an authorisation procedure. Moreover, the fact that the duration of the authorisation issued is limited, foreign service providers have to restart the procedure from the beginning upon its expiry, with all fees and costs applicable. Furthermore, no mutual recognition of such authorisation is in place, thus constituting a burden for cross-border service providers. Nevertheless, tacit approval applies, thus lighting the procedure¹⁰⁵.

Despite the above, Spain has a strong presence in the

¹ Consultative body to central government in the field of public procurement.

construction Single Market, with five companies in the EU top 20. The members of the Spanish Construction Companies Association SEOPAN achieved 29% of their international turnover and secured 20% of their deals in the EU Single Market (21 Member States)¹⁰⁶ in 2013¹⁰⁷. Furthermore, European foreign direct investment (FDI) represented more than 77% of the FDI inflows in Spain in 2013, 9.1% of which is invested in the construction sector¹⁰⁸.

Finally, as for the implementation of Eurocodes, 44 EN Parts are published as National Standards and the EN 1999 series is ratified, although the use of Eurocodes is not compulsory nor is it enforced in public procurement. National Annexes have been published on 10 Eurocode Parts and no other national standards are used in parallel with Eurocodes for structural design¹⁰⁹.

TO 5 - International competitiveness

Spain ranked 32nd in the **Global Competitiveness Index** 2016-17, compared to 35th in 2014-15¹¹⁰. The country has important strengths, such as excellent infrastructure and a good domestic market size. Moreover, its performance in terms of the **internationalisation of its SMEs** is above or in line with the EU average, with the time and cost of the administrative processes required for **export-related documentation** being below the EU average. Namely, the cost of export-related document compliance was negligible in 2016, compared to the EU average of USD 16.4 (EUR 15.3), taking 1 day (against the EU average of 1.4)¹¹¹.

Several Spanish construction companies are leaders in the international market. For instance, ACS ranks second in the EU in terms of total sales, right after Vinci¹¹². Moreover, five other firms are part of the 30 biggest companies for infrastructure works in Europe¹¹³. Among the SEOPAN¹¹⁴ members, 67% of the **non-domestic turnover** comes from outside Europe¹¹⁵, particularly from the American continent (25% from North America and 29% from Central and South America)¹¹⁶. The activity of Spanish construction companies is also growing in the Middle East, which represented 18% of the contracts secured in 2013¹¹⁷. Major construction companies won important infrastructure deals in Saudi Arabia, such as the development of railway lines between Medina and Mecca (EUR 6.73 billion), and an underground railway project (EUR 6.03 billion)¹¹⁸.

However, according to the 2015 Global report presented by SEOPAN, total sales at national level have decreased for the eighth consecutive year, falling by 11% and reaching EUR 5,459 million in 2015¹¹⁹.

According to the CNC, although there are already some SMEs that have secured international contracts abroad, the international presence of Spanish construction firms is mainly limited to the larger players. It is therefore important to ensure that a greater proportion of SMEs is involved in the process of internationalisation.

8. Outlook

More than six years of economic downturn have resulted in a period of sustained slowdown for the Spanish construction sector, with negative consequences on employment, profits and productivity. However, **the Spanish general economy is predicted to grow** at around 2.3% in 2017 and 2.1% in 2018, with the GDP reaching EUR 1,151 billion. Similarly, **the Spanish construction sector has recently started to show signs of recovery**, accompanied by an increase of investment, though not uniformly across all sub-sectors. For instance, according to Fundación de Cajas de Ahorros (Funcas), investment in construction will grow by 3.7% in 2017, thus improving its previous estimate by 0.1% of a percentage point¹²⁰.

In parallel, the number of companies in the broad construction sector is expected to increase in all sub-sectors except for narrow construction, which accounts for the largest number of companies (58.5%) and employees (64%). As result, total number of companies in the broad construction sector is expected to decrease by 0.7% 2017, respectively, reaching 612,745 companies. Similarly, the number of workers employed in the broad construction sector is projected to decrease by 1% in 2017, reaching 1.6 million, far below the 3.1 million workers employed in 2008. Finally the value added of the broad construction is projected to increase during the next years, reaching EUR 61,937 in 2017, 3.9% above 2014 figures but still 56.5% below pre-crisis values.

Maintenance and rehabilitation works, particularly of non-residential buildings, are expected to continue growing steadily after 7 years of recession, at a growth rate of 1.5% until 2017 and up to 2.1% in 2018 and 2019, in line with the government's efforts in terms of energy efficiency and sustainable construction¹²¹. The office building segment will grow somewhat above these averages, since it comes from a few years of great contraction. However, industrial construction is not set to reach the average¹²².

Construction of residential housing is projected to pick up by 4.8% in 2017 due to the combination of increased sales and recovering house prices, which have started to animate the real estate market¹²³. In addition, 140,000 new residential dwellings annually will need to be constructed up to 2025 in order to satisfy internal demand¹²⁴. This area is predicted to contribute significantly to the overall growth of the Spanish construction sector.

Civil engineering works experienced an encouraging growth in 2015, due to increased public infrastructure projects, particularly in transport infrastructure like railways. Nevertheless, this revival was followed by a slight decrease (-1%) in 2016, particularly due to fiscal imbalances and uncertainty regarding the country's political instability. A more balanced situation is expected for 2018-2019. Civil engineering activities will increase and could reach a growth rate of about 3.4% in 2018 and 3.6% in 2019.

Considering that current demand could be distorted by a significant presence of buyers-investors to the detriment of the traditional buyer finalist it is unclear how sustained this recovery will be. This might lead to a major instability in the market, as sudden changes may shift investors to other opportunities.

In addition to that, the increased overseas activity of Spanish construction companies over the past few years requires caution. Though associated with improvements in the companies' business profile, certain countries, particularly in the Middle East and Latin America, can prove challenging from an execution or working capital standpoint. This has sometimes led to important losses of capital from Spanish companies, as was the case for Obrascón Huarte Lain (OHL) and Fomento de Construcciones y Contratas (FCC) in Algeria, or Isolux Corsan and Grupo Aldesa in Brazil and Mexico.

Annex – Legend

Definitions

The Construction sector (F) definition followed in the ECSC country databases and factsheets is based on the NACE¹ (Nomenclature Statistique des Activités économiques dans la Communauté européenne) classification, that is the statistical classification of economic activities in the European Community.

The **Narrow and Broader construction sector definitions** adopted throughout the compilation of the database and fact sheet are as follows:

- **Narrow definition** of the construction sector: this refers to sector F - Construction, as defined by the NACE rev.2 classification:

NACE F - Construction

- F.41 - Construction of buildings
 - F.41.1 - Development of building projects
 - F.41.10 - Development of building projects
 - F.41.2 - Construction of residential and non-residential buildings
 - F.41.20 - Construction of residential and non-residential buildings
- F.42 - Civil engineering
 - F.42.1 - Construction of roads and railways
 - F.42.11 - Construction of roads and motorways
 - F.42.12 - Construction of railways and underground railways
 - F.42.13 - Construction of bridges and tunnels
 - F.42.2 - Construction of utility projects
 - F.42.21 - Construction of utility projects for fluids
 - F.42.22 - Construction of utility projects for electricity and telecommunications
 - F.42.9 - Construction of other civil engineering projects
 - F.42.91 - Construction of water projects
 - F.42.99 - Construction of other civil engineering projects n.e.c.
- F.43 - Specialised construction activities
 - F.43.1 - Demolition and site preparation
 - F.43.11 - Demolition
 - F.43.12 - Site preparation
 - F.43.13 - Test drilling and boring

- F.43.2 - Electrical, plumbing and other construction installation activities
 - F.43.21 - Electrical installation
 - F.43.22 - Plumbing, heat and air-conditioning installation
 - F.43.29 - Other construction installation
- F.43.3 - Building completion and finishing
 - F.43.31 - Plastering
 - F.43.32 - Joinery installation
 - F.43.33 - Floor and wall covering
 - F.43.34 - Painting and glazing
 - F.43.39 - Other building completion and finishing
- F.43.9 - Other specialised construction activities
 - F.43.91 - Roofing activities
 - F.43.99 - Other specialised construction activities n.e.c.

- **Broader definition** of construction: this includes sector F, as well as other sectoral activities, namely real estate activities (NACE L), architectural and engineering activities and related technical consultancy (NACE M) and certain manufacturing sub-sectors (NACE C), related to the construction sector:

NACE L – Real estate activities

- L.68.1 - Buying and selling of own real estate
- L.68.2 - Renting and operating of own or leased real estate
- L.68.3 - Real estate activities on a fee or contract basis

NACE M - Professional, scientific and technical activities

- M.71.1 - Architectural and engineering activities and related technical consultancy

NACE C – Manufacturing

- C.16.2 - Manufacture of products of wood, cork, straw and plaiting materials
- C.23.3 - Manufacture of clay building materials
- C.23.5 - Manufacture of cement, lime and plaster
- C.23.6 - Manufacture of articles of concrete, cement and plaster
- C.23.7 - Cutting, shaping and finishing of stone
- C.25.1 - Manufacture of structural metal products

The **classification** of companies by R&D expenditure according to the 2015 EU Industrial R&D Investment Scoreboard is based on the industry structure and definitions of the ICB (industry Classification Benchmark).

The construction-related companies considered for the CFS are classified as follows:

2000 – Industrials

2300 - Construction & Materials

- **2350 - Construction & Materials**
 - **2353 - Building Materials & Fixtures:** Producers of materials used in the construction and refurbishment of buildings and structures, including cement and other aggregates, wooden beams and frames, paint, glass, roofing and flooring materials other than carpets. Includes producers of bathroom and kitchen fixtures, plumbing supplies and central air-conditioning and heating equipment. Excludes producers of raw lumber, which are classified under Forestry.
 - **2357 - Heavy Construction:** Companies engaged in the construction of commercial buildings, infrastructure such as roads and bridges, residential apartment buildings, and providers of services to construction companies, such as architects, masons, plumbers and electrical contractors.

2700 - Industrial Goods & Services

- **2750 - Industrial Engineering**
 - **2753 - Commercial Vehicles & Trucks:** Manufacturers and distributors of commercial vehicles and heavy agricultural and construction machinery, including rail cars, tractors, bulldozers, cranes, buses and industrial lawn mowers. Includes non-military shipbuilders, such as builders of cruise ships and ferries.
- **2790 - Support Services**
 - **2797 - Industrial Suppliers:** Distributors and wholesalers of diversified products and equipment primarily used in the commercial and industrial sectors. Includes builders merchants.

Apparent labour productivity is the gross added value per person employed in three sub-sectors of the construction sector.

Clerical support workers record, organise, store, compute and retrieve information, and perform a number of clerical duties in connection with money-handling operations, travel arrangements, requests for information and appointments. Tasks performed by clerical support workers usually include: stenography, typing, and operating word processors and

other office machines; entering data into computers; carrying out secretarial duties, etc.

Construction cost index measures the development of costs incurred by the contractor to carry out the construction process. It is based on the construction of new residential buildings.

Craft and related trades workers apply specific technical and practical knowledge and skills to construct and maintain buildings; form metal; erect metal structures; set machine tools or make, fit, maintain and repair machinery, equipment or tools; carry out printing work; and produce or process foodstuffs, textiles, wooden, metal and other articles, including handicraft goods, etc.

Elementary occupations involve the performance of simple and routine tasks which may require the use of hand-held tools and considerable physical effort. Tasks performed by workers in elementary occupations usually include performing simple tasks connected with mining, construction and manufacturing including product-sorting; packing and unpacking produce by hand, and filling shelves; providing various street services, etc.

Equivalised income is the household income recalculated to take into account the different financial requirements of different household types (e.g. larger households typically need a higher income than smaller ones to achieve a comparable standard of living).

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.

Gross operating surplus is a measure of profitability of the sector. It represents the surplus generated by operating activities after the labour factor input has been recompensed (Eurostat).

Gross fixed capital formation is a measure of the net increase in fixed capital, i.e. of investments in construction (commercial and industrial buildings, residential dwellings, roads and railways), machinery and equipment.

Gross value added (GVA) at market prices is the output at market prices minus intermediate consumption at purchaser

prices; it is a balancing item of the national accounts' production account. GVA at factor costs can be derived by subtracting other taxes on production from GVA at basic prices and adding other subsidies on production ($GVA + \text{taxes on products} - \text{subsidies on products} = GDP$). GVA is used in the estimation of Gross Domestic Product (GDP) as GVA measures the contribution to the economy of each individual producer, industry or sector in a given country.

Investment per worker is calculated as gross fixed capital formation in construction and real estate divided by the number of employees in the two sectors.

Investment ratio is the share of gross fixed capital formation in the GDP.

Loan-to-Value ratio is the ratio of the mortgaged amount to the appraised value of the property.

Lower tier constructors are often smaller companies further down the construction supply chain, which take on smaller scale projects.

Output gap is the difference between the actual and potential GDP.

Potential GDP is the hypothetical GDP that a country would have if it was perfectly efficient, e.g. there was no unemployment and all resources were used at their full capacity.

Technicians and associate professionals perform technical and related tasks connected with research and the application of scientific or artistic concepts and operational methods in the fields of physical sciences including engineering and technology, life sciences including the medical profession, and social sciences and humanities; initiating and carrying out various technical services related to trade, finance and administration including administration of government laws and regulations, etc.

Tertiary education in engineering, manufacturing and construction gives the number of graduations in the first and second stages of tertiary education, according to the International Standard Classification of Education (ISCED) 1997 for higher education (levels 5 and 6). The indicator refers to graduates in 'Architecture and building', specifically architecture and town planning (structural architecture, landscape architecture, community planning, cartography); building, construction; civil engineering.

Volume index of production is an index of value added by the construction sector, at constant prices (i.e. stripped out of inflationary movements).

Methodology notes

a) Forecasting key sectoral figures in construction

Rationale

The lack of sufficiently long time series of data at sub-sector level prevents us from developing robust econometric models. Therefore, a more simplistic approach has been adopted to estimate the forecasts. The approach used here is based on the assumption that value added is a predictor for all other forecasted indicators.

Statistical data from EU wide providers (e.g. Eurostat) is published with some delay. This results in the fact that the latest available data can be one or two years old, depending on the time of the publication of the CFS. Most of the Eurostat data on 2016 will be available only after July 2017.

Step 1: Forecast of Value Added

The first step of the forecasting process was to forecast the value added for each of the NACE sub-sectors forming the broad construction industry. The following procedure was followed:

- 1) The forecast of VA for each sub-sector is based on the forecast of the nearest high-level NACE sector produced for the SME Annual Report. The SME database contains forecasts for VA at the NACE 1-digit and NACE 2-digit level only. For those 1-digit and 2-digit sectors which are part of the broad definition of construction, the forecasts from the SME database were used directly.
- 2) For the NACE 3-digit subsectors, which were not forecasted in the SME database, we assume a growth rate equal to the growth rate of the overarching NACE 2-digit subsector forecasts over time.

Step 2: Forecast of employment

- 1) The forecasts for each NACE 3-digit subsector were created assuming constant apparent labour productivity (number of persons employed / VA) ratio for 2014-2016. The rationale behind the assumption of a constant labour productivity ratio is an economic one – it is expected that apparent

labour productivity would not change much between 2013 and 2016.

- 2) This constant ratio for each subsector has been assumed equal to the respective ratio in 2013 – this is the last year of historic data for employment, but the first year where VA is forecasted.
- 3) The levels of employment for the NACE 3-digit sectors were forecasted using the assumed ratios between these levels and VA, and the forecasted VA levels.
- 4) The levels of employment for the NACE 2-digit and 1-digit sectors were produced as a simple sum of the 3-digit sectors they contain, i.e. building them from the bottom up. Therefore, these forecasts differ slightly from the employment forecasts previously used from the SME database.

Step 3: Forecast of number of enterprises

- 1) The methodology for forecasting number of enterprises which we followed is the same as the methodology for forecasting Value Added: we used the top-level sector forecasts from the SME database and assumed that sub-sectors followed the same growth rate as the higher-level sectors.
- 2) The forecast for number of employees per enterprise is a simple ratio of the forecasts of employment and number of enterprises in the respective sector.

Step 4: Forecasting Turnover and Volume index of production

- 1) Volume index of production in total construction, construction of buildings and construction of civil engineering works have been forecasted assuming the same growth rates as the growth rates of gross fixed capital formation in the respective sector in the AMECO forecasts.
- 2) Turnover has been forecasted on the basis of the VA forecast, assuming the same growth rate over time.

b) Product rankings: Domestic production, exports, imports and domestic sale

Data source

The data used to produce this section of the country databases were accessed through the Easy ComExt data portal, which contains both PRODCOM and ComExt data. PRODCOM provides data on the production, exports and

imports of manufactured products at the specific product code-level, whereas ComExt also provides information on exporting destinations, however only an NACE 4-digit level.

Selection of products

1. Broad definition of the construction sector. All 6-digit product groups from those manufacturing sectors which are considered part of the broad definition of the construction industry have been included in the analysis.
2. Additional construction-related products. The starting point for identifying additional products used in construction activities was the selection of all products within those additional NACE 4-digit sectors considered more distantly related to construction. The resulting detailed-level product list was vetted through desk research performed by LE, to eliminate those products clearly not used in construction. Additionally, all product descriptions in the remaining NACE 4-digit sectors not elsewhere considered were screened for key search terms such as ‘machinery’ and ‘insulation’ (and their roots and derivatives), to identify any other products potentially used in construction activities. As a result, a total of 334 products from 32 different NACE 4-digit sectors were included in the additional construction-related products for analysis.

Reporting level

The PRODCOM database provides rich, product-level data of annual production, exports and imports values at country level. Each product is characterised by a 9-digit code. However, the description of products at such a disaggregated level is often not meaningful to the reader. Therefore, after the initial stage of product selection, the data has been aggregated up to 6-digit product groups, in order to provide information of more practical use for the ECSO. This means that products which are part of the 6-digit product group included but were not identified as additional construction-related products, if any, would not form part of the aggregates². For the manufacturing products from NACE 4-digit sectors in the broad definition of construction, this is, of course, not a relevant concern.

The process of data aggregation uses the RAMON Classifications database, which includes the list of PRODCOM products and their mapping from NACE 4-digit level, to a 6-digit product group, to the most disaggregated

² Caution should be taken not to interpret the results as results for the whole 6-digit product group, but for those construction products within the group which are related to construction, although, in the vast majority of cases, it is the whole 6-digit product group that is included in the analysis.

9-digit product code, and their definitions. Before producing each ranking, the value of the indicator of interest has been aggregated to 6-digit product group level by simply summing the values of all products within each 6-digit product group together.

PRODCOM includes annual data from 2009 to 2015.

Product group rankings

The rankings produced for each country database are characterised by three dimensions:

- **Indicator** (aggregated from 9-digit to 6-digit product group through summing of values):
 - Value of exports (EUR) from the country of interest; or
 - Value of domestic sales (EUR) in the country of interest, defined as:

$$\text{Domestic sales value}_t = \text{Production value}_t + \text{Imports value}_t - \text{Exports value}_t$$

- **Ranking criteria:**
 - Ranking of the indicator according to its 2015 value in the country of interest; or
 - Ranking of the indicator according to its 2015 value in the total EU28; and
- **Relevance to the construction industry:**
 - Whether product groups included are from the NACE 4-digit industrial classifications which are included in the broad definition of the construction industry; or
 - The product groups included represent additional construction-related products not included in the broad definition of the construction industry.

It is worth noting that when producing exports rankings according to the value in the country of interest, both intra- and extra- EU28 exports are considered. However, when producing exports rankings according to the value in the EU28, the ranking factor of products is extra- EU28 exports, but the actual values of exports presented for each product group still take into account both intra- and extra-EU28 exports.

This results in the following total of 8 rankings³:

Highest-ranking construction products according to country exports;

- Highest-ranking additional construction products according to country exports;

- Highest-ranking construction products according to EU28 exports;
- Highest-ranking additional construction-related products according to EU28 exports;
- Highest-ranking construction products according to country domestic sales (apparent consumption);
- Highest-ranking additional construction-related products according to country domestic sales (apparent consumption);
- Highest-ranking construction products according to EU28 domestic sales (apparent consumption);
- Highest-ranking additional construction-related products according to EU-28 domestic sales (apparent consumption);

Additionally, a full ranking of 6-digit product groups according to their share of country exports in broad construction NACE 4-digit sector (according to 2015 values) has been produced as a summary⁴.

Exporting partners rankings

In addition to the export and domestic sales 6-digit product group rankings based on PRODCOM data, the database incorporates information on the exporting destination country. This data is available from the ComExt data tables, but only at the NACE 4-digit level. Two rankings were produced⁵:

- Top 30 exporting destinations according to their share of exports in **construction-related product group**; and
- Top 30 exporting destinations according to their share of exports in **additional construction-related product group**

The additional construction-related NACE 4-digit product groups included here are those where the contained additional construction-related 6-digit product groups comprised at least 50% in combined 2015 exports value of the respective additionally identified NACE 4-digit product group.

³ As of 11/09/2015, the listed rankings are located in sheets 'Table 3.8b' – 'Table 3.8e_add' of each country database.

⁴ As of 11/09/2015, the listed rankings are located in sheet 'Table 3.8a' of each country database.

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