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European Commission

European Construction Sector Observatory

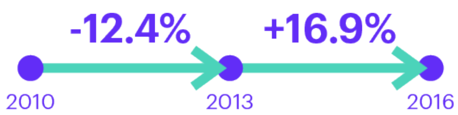
Country profile Spain

June 2018

In a nutshell

The Spanish **construction sector** is showing signs of recovery after a sharp drop by 12.4% in the number of construction enterprises between 2010 and 2013. It increased in the following years, from 2013 to 2016, by 16.9% leading to a total 2.4% of increase in 2016 compared with 2010.

The Spanish construction sector evolution 2010-2016

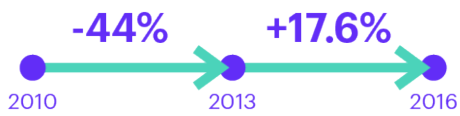


Similarly, the **number of workers employed in the broad construction sector** increased between 2013 and 2016, going from around 1.6 million to 1.7 million. Nevertheless, compared to 2010 values, employment in manufacturing, narrow construction and architectural and engineering activities have declined by 38.9%, 33.8%, and 8.4% respectively. This is due to the sharp decline, of 35.0%, from 2010 to 2013 of the total employment in broad construction. Contrary, the real estate sub sector passed the employment level in 2016 by 3.8% compared to 2010.

Total employment in broad construction sector 2010-2013 ↓ **35%**

In parallel, the **turnover of the broad construction sector** amounted to EUR 182.7 billion in 2016, decreasing from 2010 to 2013 by 44.0%, especially in narrow construction (52.6%). The trend reversed since 2013, increasing by 17.6% between 2013 and 2016, particularly pronounced in the architectural and engineering activities (23.0%). As a result, the **gross operating surplus** fell by 40.2 % from 2010 to 2014, particularly due to increasing input material price, however it increased during 2014/2015 by 15%.

The Spanish turnover of the broad construction sector 2010-2016



Business confidence has generally been improving in Spain since 2010, with the consumer confidence indicator increasing from -20.9 to -3.8 in 2016, reflecting a positive consumer market attitude. The **number of households** has been steadily growing since 2010, reaching 18.4 million in 2016 (+4.5%) supported by the less stringent credit conditions in 2016 (mortgage rates 4.3% lower than in 2010). The **house price index** dropped by 22.2% over 2010-2016 which also contributed to the recovery of the Spanish **real estate and residential construction markets**.

The **revival of the industry** will mostly rely on housing renovation, availability of trainings to cover lack of skills, and sustainable construction, as supported by several policy schemes and dedicated programmes. In addition, if the political conflicts in Spain remain, they could affect the construction sector negatively.

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 construction sector. The country is a global exporter of infrastructural services and achieved a **trade surplus** of EUR 1,163 million in 2015. Nevertheless, the exports worldwide have decreased by 14.2% between 2014 and 2015. However, there has been a high increase (61.5%) in the exports to EU-28 during the same period.

1

Key Figures

The **number of enterprises** in the Spanish broad construction sector amounted to 653,117 in 2016[1] (Figure 1). Companies in the narrow construction sector accounted for 60.0% of the total number of enterprises, followed by real estate activities (21.1%), architectural and engineering activities (13.8%) and manufacturing (5.2%). Spain experienced a sharp drop in the number of construction enterprises between 2010 and 2013 (-12.4%), but steady recovery in the following years (+16.9%) led to the 2.4% of increase in 2016 compared with 2010 values. The biggest increase since 2013 has been reported in narrow construction (22.4%), followed by real estate activities (18.9%), whereas the number of companies in the manufacturing sub-sector, and architectural and engineering activities only increased by 0.1% and 1.1% respectively.

Number of construction enterprises 2010-2016

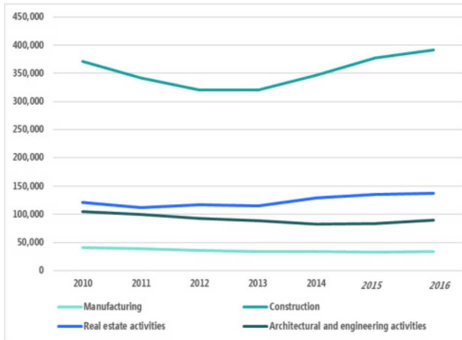
-12.4% +16.9%

2010 → 2013 → 2016

Production in construction has been following a similar declining trend in 2010-2012 with the following partial recovery until 2016. More specifically, 2016 values compared to 2010's are 3.2% below for construction, with the production in construction of buildings practically at the same level (-0.1%). The volume of production in civil engineering remains the lowest, being 17.3% under 2010's index of production in 2016 (Figure 2). Despite the upward trend registered since 2013, (+16,9% increase since 2013).

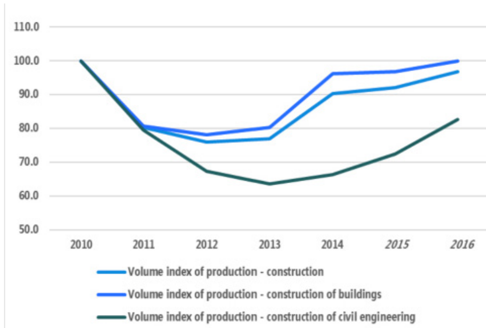
Production in construction 2010-2016 ↓ 3.2%

Figure 1: Number of enterprises in the construction sector in Spain over 2010-2016



Source: Eurostat, 2017.

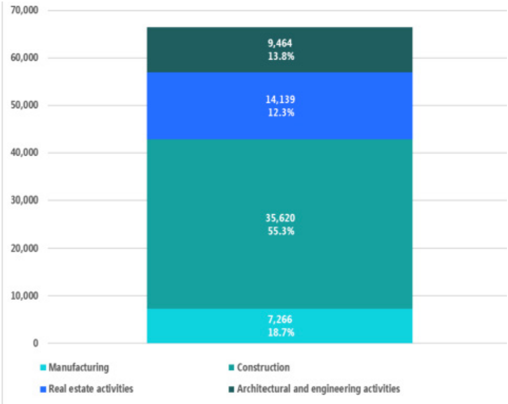
Figure 2: Number of enterprises in the construction sector in Spain over 2010-2016



Source: Eurostat, 2017.

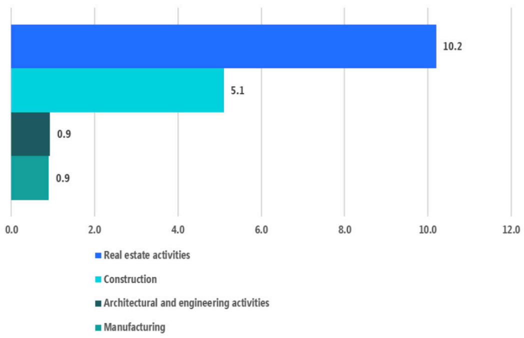
In 2016, the **total value added**[2] of the broad construction sector amounted EUR 66.5 billion (Figure 3), with narrow construction having the largest share (53.6%). The total value added of the broad construction sector has been on decline until 2014 with a slow recovery till 2016, however still being 30,7% lower than in 2010. The share of gross value added of the broad construction sector in the GDP[3] decreased by 12,6% between 2010-2015[4], reaching in 2015 to 17.1%[5], with real estate activities having the largest contribution (9.9%) (Figure 4).

Figure 3: Value added in the construction sector in Spain in 2016 (EUR m)



Source: Eurostat, 2017.

Figure 4: Gross value added as share of GDP in the construction sector in Spain in 2015 (%)



Source: Eurostat, 2017.

2

Macroeconomic Indicators

In 2016, Spain's **GDP** amounted to EUR 1,102.85 billion, a 3.2% increase compared to the previous year, and 20.3% compared to 2010. The growth of GDP is supported by increasing employment, declining oil prices and the improvement of financing conditions that resulted in an increased consumer spending. However, the economic situation in Spain remains highly sensitive to oil prices and political tensions in competing tourist destinations[6].

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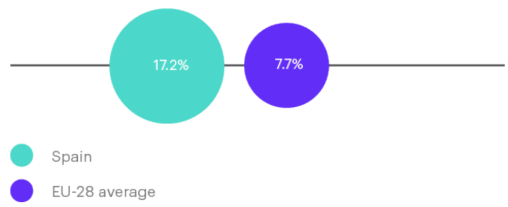
Regarding the **unemployment rate**, Spain registered a 17.2% unemployment rate in 2017[8], being one of the highest in the EU-28, above two times the EU-28 average of 7.7%. It has been on the increase since 2010 (at 19.9%), peaking in 2013 at 26.1% and declining since then. Youth (below the age of 25) unemployment was at 38.6% in 2017, well above both the EU-28 average of 16.8%[9].However, the situation has improved compared to the previous years where unemployment under 25 years reached 55.2% in January 2014, and 41.5% in 2010. Notable, the unemployment is also affecting **SMEs**, which cover 73.0% of the employment in Spain, higher by 9.3% the EU average[10].

Unemployment rate in 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 2013 and falling to -0.6% in 2015, and slightly increasing in 2016 to -0.3% .

In terms of demographics, the **total population** in Spain amounted to 46.5 million people in 2016 and remained rather stable since 2010. However, the low employment rates, especially among youth, have contributed to the outflow of labour force from the country, decreasing its factual population[11]. Since 2008, the number of Spanish people registered abroad has increased by 56%, from 1.4 to 2.3 million in 2016[12]. The population of Spain is expected to decrease in the next decade by 4.2% until 2030, but recovering slightly by 2050, reaching 45.5 million people.

In 2016, Spain's **working age population** accounted for 66.1% of its total population, exceeding the EU-28 average of 65.3%[13]. During the past decade, the median age in Spain has increased by 4 years. Due to the life expectancy increase, among other factors, the share of 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 18.7% to 33.4% by 2050.

Government deficit has reduced for the past years. It accounted for -4.5% of Spain's GDP in 2016, compared to -5.1% in 2015 and -9.4% in 2010. On the other hand, **government spending** has been decreasing, reaching 42.4% of GDP in 2016, 7.0% lower than in 2010. This number, however, is still higher that pre-crisis level of around 39.0 %, but already suggests some positive economic dynamics in the country. **Central government debt** accounted for 99.4% of GDP in 2016, decreasing slightly since 2014 level but much higher than 2010 (60.1%).

> Spain has been ranked 1st in trading across borders and the overall ranking position of Spain is the 28th (out of 189[14]). Spain was also ranked 86th in terms of starting a business in 2017, according to the Doing Business 2018 Report[15], one position below the raking achieved in 2016.

Registering a firm takes 7 procedures and 13 days, considerably above the OECD high income average (4.9 procedures and 8.5 days). Furthermore, the cost of starting a business represents 4.8% of income per capita, compared to the 3.1% OECD high-income average. The paid-in capital for a new firm was set at 12.5% in 2017, again considerably higher than the respective OECD average (9.2%[16]) but lower than 2016 (12.9%).

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" dimensions[17].

> Spain is reinforcing its competitive position in regards to financial market development. With a score of 4 out of 7, it ranked 71st out of 138 in the Global Competitiveness report 2016-2017[18], 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 to of access to loans and financial services meeting business need are still an issue, placing the country at the 88th and 83rd place, respectively[19].

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 2016, these amounted to EUR 906.7 billion, which has been lowered for the past few years, having in 2013 reached EUR 1,009.4 billion.

Access to finance is being supported by several EU Institutions, such as the European Investment Band or European Investment Fund (EIF). Spain was the first EU-28 country to implement EIF's SME Initiative, a Horizon 2020 initiative that entails an innovative use of Structural and Investment Funds (ESIF 2014-2020)[20]. Moreover during 2017, SMEs in Spain, perceived the availability of bank loans to improve the most among the EU (together with Portugal and Ireland[21].

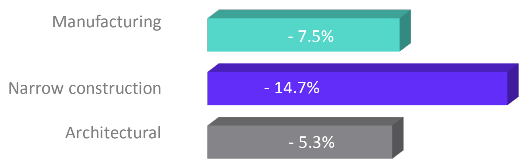
3

Key economic drivers of the construction sector

Productivity

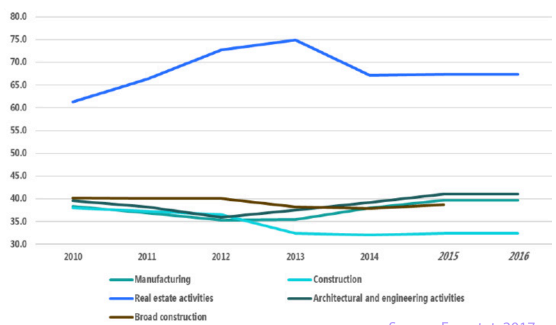
Labour productivity in Spain declined for most of the construction sub-sectors between 2010 and 2013. Narrow construction, manufacturing and architectural dropped by 14.7%, 7.5%, and 5.3% over these years, respectively. Since 2013 there has been an increase in productivity in those sub-sectors of 0.1%, 12.0%, and 9.5%. Conversely, real estate activities have shown the opposite trend, increasing rapidly its productivity by 22.2% between 2010 and 2013 but decreased 10.0% since 2013 value (from 74.9% to 67.4%). Labour productivity in real estate reached EUR 67,400 in 2016, doubling narrow construction (EUR 32,400) and well above the other two sub-sectors (Figure 7).

Labour productivity in Spain declined for construction sub-sectors between 2010 and 2013



Productivity trends in construction are affected by the employment fluctuations. During 2010-2013 the employment in construction sector in Spain was dropping, adding to the decline of productivity. In the last few years positive economic environment has pushed the employment and productivity in construction sector up[22].

Figure 5: Labour productivity in the construction sector in Spain over 2010-2016 (EUR k)



Source: Eurostat, 2017.

In 2017, a five years National General Collective Agreement was signed between social partners in construction sector: the National Confederation of Construction (CNC), which represents employers, and the two trade unions CCOO Construction and Services and UGT-FICA. It is the 6th General Agreement from the construction sector and its goal is to improve the working conditions in the sector. At the same time, it also aims to increasing productivity and competitiveness in the construction sector. It is one of the biggest agreements in the Spanish economy since it involves directly around 800,000 employees[23]. It was published in the Official State Bulletin (BOE) in September 2017[24]. Among the changes, it is worth highlighting the 1.9% salary increase agreed. One of the initiatives taken is that, in order to increase productivity it will promote the use of new technology applied to the sector, including the "BIM Environment", a new collaborative work methodology based on the use of an intelligent 3D model. In addition, it will continue to improve the qualification and necessary skills of employees in the sector with specific formation given by the Construction Labour Foundation (FLC) (See Section 7: TO 2 – Skills).

Profitability

The **turnover** of the broad construction sector in 2016 amounted to EUR 182.7 billion[25]. It had been significantly decreasing from 2010 to 2013 by 44.0%, especially in narrow construction (52.6%). This declining trend reversed since 2013, increasing by 17.6% between 2013 and 2016. The increase during this period was particularly pronounced in the architectural and engineering activities (23.0%), being the other three around 15-17%. The profitability of construction sector in 2016 still remains 34.1% lower than 2010 level. The negative trend is expected to continue in 2018 with estimated decline of turnover by 7.3% compared to 2016 value (from EUR 111,8 million to EUR 103,6 million).

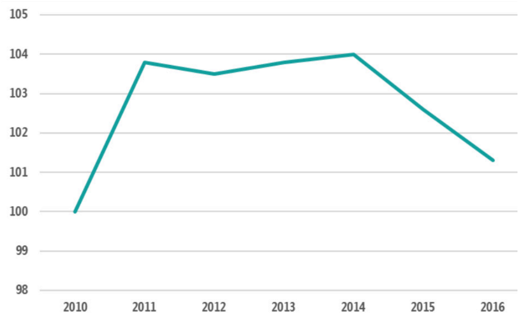
The **gross operating surplus** of the broad construction sector in Spain had sharply decreased from 2010 to 2014, falling by 40.2% to EUR 21.8 billion in 2014, due to the sharp changes in demand, decrease of turnover and increase of construction costs. Nevertheless, during 2015[26] it increased by 15.0% but is still 30.2% below 2010's operating surplus.

Gross operating surplus of the broad construction secor decrease 2010-2015

30.2%

The gross operating rate of the broad construction sector[27], which gives an indication of the sector's profitability, was 14.3% in 2015, 1.3% percentage points higher than 2010 value (13.0%), reaching the best rate since 2006. In parallel, the cost of construction for residential buildings increased in 2010-2014, but declining slightly (-2.9%) in the last two years. This is in line with similar decrease of input prices for materials and in labour costs (103 to 101 index points, and 106 to 101 index points respectively) (Figure 8).

Figure 6: Construction cost index for residential buildings over 2008-2016 (2010=100)



Source: Eurostat, 2017.

Employment

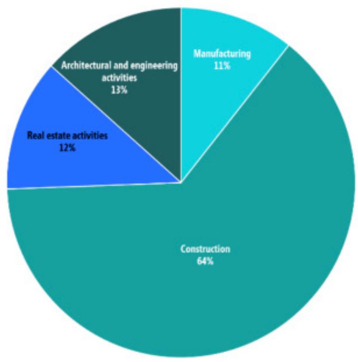
> The number of people employed in the broad construction sector declined sharply from 2010 to 2013, from 2,4 to 1,6 million people (-35.0%) [...] , it has slowly recovered since 2013[28] reaching 1,7 million in 2016.

The **number of people employed** in the broad construction sector declined sharply from 2010 to 2013, from 2,4 to 1,6 million people (-35.0%), suggesting a deep systematic crisis in the sector. However, it has slowly recovered since 2013[29] reaching 1,7 million in 2016. Among the 1.7 million people working in the broad construction sector, the narrow construction sub-sector employs 63.8%; while real estate, manufacturing, and architectural and engineering activities employ 12.2%, 10.6%, and 13.4% of people respectively (Figure 7).

Compared to 2010 values, employment in manufacturing and narrow construction has declined the most (both around 38.8%). Architectural and engineering activities declined by 8.4%. Contrary, the real estate sub sector passed the employment level in 2016 by 3.8% compared to 2010 values.

In terms of **employment by occupation**, the number of craft and related trades workers in narrow construction amounted to 694,000 in 2016, 30.0% lower than in 2010 (1,190,000), being the largest occupation sub-sector. Similarly, elementary occupations dropped by 50.0% and managers by 60 % over the same period. Conversely, clerical support workers experienced a 90.0% increase over the same period, from 17,000 to 31,000.

Figure 7: Percentage of people employed by construction sub-sectors in Spain in 2016



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 23.2% between 2010 and 2016, reaching 311,000 professionals in 2016.. Self- employment in the narrow construction sector still remain below 2010 level, with exception of growing part time and temporary employment (25.5% and 15.6%), suggesting a changing model of employment in the narrow construction in the country. Conversely, the number of self-employed persons in real estate sub-sector has recovered rapidly from the crisis, reaching 40,000 self-employed in 2016, an increase of 29.0% compared to 2010.

Decrease of self-employed workers in the narrow construction sector 2010-2016: 311,000

23.2%

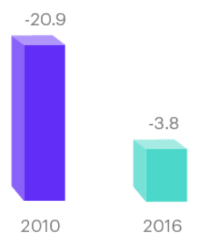
According to the Association of Self-employed Professionals (Unión de Profesionales y Trabajadores Autónomos - UPTA), the decline observed during the period 2008-2013 can be explained by the paralysis in residential construction following the crisis, which offered most of the employment opportunities for self-employed carpenters, plumbers and electricians[30]. 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 companies[31].

The share of people employed by SMEs in the broad construction sector in Spain has remained stable for the past decade. In 2015[32], 88.0% 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 2010, with the **consumer confidence indicator i**ncreasing from -20.9 to -3.8 in 2016, reflecting a positive consumer market attitude. Nevertheless, there was a decrease with respect to 2015, when the indicator reached a value over zero (0.3) for the first time since 2000. According to the forecasts this decrease will not continue during the next few years, and will start growing slowly again.

Business confidence comparison 2010-2016



The **industry confidence indicator** followed a similar trend, it increased from -13.8 in 2010 to -2.3 in 2016, evidencing a better business climate in the country, having again a decline between 2015 and 2016 (-0.3 to -2.3) which is not expected to remain. On the other side, construction confidence indicator, reflected different structural, dropping highly between 2010 and 2011, from -29.7 to -55.5. This low value remained for the next two years; however, it improved in 2014, reaching -25.3 in 2015 and again decreasing to -39.6 in 2016. Nevertheless, this trend suggests a slow recovery of the sector.

In parallel, the **investment ratio** declined from 23.0% in 2010 to 20.0% in 2014. However, it is increasing since then, having 21.3% in 2016 and expecting to continue to grow slowly. Similarly, **investment per worker** in 2010 had dropped to EUR 64,700 but during the past years there has been a quick recovery reaching EUR 97,800 (+50.1% higher than in 2010), suggesting the positive investment climate in the country in the last years.

Domestic sales

The ranking of the **most domestically sold construction products** has generally remained constant in Spain between 2010 and 2016, with 2016's top 5 between 2010's top 6, with the exception of "Other structures and parts of structures, plates, rods, angles, shapes and the like, of iron, steel or aluminium". This group has had a high decrease, being ranked 1st during 2010 and 2011, and decreasing to the 13th position in 2016, meaning a 95, meaning a 95.1% decrease in its value.

"Wooden frames for paintings, photographs, mirrors, etc" products have also experienced relevant changes, decreasing from the 16th to the 27th position, decreasing its value by 82.1%. "Other wooden containers and parts thereof" increased its position from 17th to 10th during this period (16.3% increase). 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 58.5%. On contrary, the value of "Barrels and coopers' products of wood" and "Pallets, box pallets and other load boards of wood" experienced a 79.1% and 30.2% increase during that period respectively. The top 5 most domestically sold construction products, both in Spain and the EU, are summarised in Table 3. Together, these made up 44.8% of all Spanish construction product sales in 2016.

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 67.2% of all construction exports from Spain in 2016. To be noted that, between 2010 and 2016, the values of the exports of "Barrels and coopers' products of wood" and "Mortars", have increased by 178.9% and 193.2%, respectively. Nevertheless, in parallel with the domestic sales, the overall export sales have decreased between 2010 and 2016. However, the sales have been increasing since 2013. More specifically, during 2017 there was a 9.2% increase compared to 2016, and a 11.1% from 2015.

The country is a global exporter of infrastructural services and expertise[33]. As an example, the Spanish construction group Acciona has worked in 65 countries and built from a highway in Montreal to a solar power plant in South Africa[34]. In end 2017, export of construction-related products represented 8.7% of the total export in Spain[35].

Table 3: 5 most domestically sold construction products in Spain and in the EU in 2016

Spain			EU-28
Product	Value (EUR m)	Share in construction product domestic sales (%)	Product
Doors, windows etc. (Group 251210)	1,101.0	12.7	Other structures (group 251123)
Ready-mixed concrete (Group 236310)	889.6	10.3	Doors, windows, etc. (group 251210)
Prefabricated buildings of metal (Group 251110)	871.6	10.1	Ready-mixed concrete (group 236310)
Portland cement, aluminous cement, etc. (Group 235112)	840.9	9.7	Prefabricated buildings of metal (group 251110)
Prefabricated structural components for building or civil engineering, etc. (Group 236112)	839.5	9.7	Prefabricated structural components (group 236112)

Source: PRODCOM, 2017

Table 4: 5 most exported construction products in Spain and in the EU in 2016

Spain			EU-28
Product	Value (EUR m)	Share in construction product domestic sales (%)	Product
Ceramic tiles and flags (Group 233110)	48.9	71.9	Ceramic tiles and flags (group 233110)
Other worked ornamental or building stone (Group 237012)	15.3	22.5	Other structures (group 251123)
Other structures (Group 251123)	2.3	3.4	Fibreboard of wood or other ligneous materials (group 162114)
Articles of cement, concrete or artificial stone (Group 236919)	0.9	1.9	Marble, travertine, etc. (group 237011)
Portland cement, aluminous cement (Group 236919)	-	-	Doors, windows, etc. (group 251210)

Source: PRODCOM, 2017

> In terms of cross-border provision of construction services, Spain exported services for EUR 1,285 million in 2015[36] (a 14.2% decrease compared to 2014)

The total decrease between 2014 and 2015 was due to the fall in the value of exports to countries outside the EU-28, which amounted to EUR 1,238 million in 2014 and decreased to EUR 865 million. Nevertheless, the **exports** to EU-28 countries increased by 61.5% between this period representing 32.7% of all the exports in 2015.

In parallel to the export values, there was a general worldwide decrease of imports between 2014 and 2015. Spain **imported** a total of EUR 122 million in construction services in 2015, 12.2% lower compared to 2014 total imports. However, the imports coming from EU-28 countries increased, in 2015 they represented 67.2% of the total, versus 43.1% in 2014.Spain therefore achieved a **trade surplus** of EUR 1,163 million in 2015.

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 drastically decreased in the last years, reaching EUR 39.9 billion in 2016, 65.1% 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. Moreover, construction is among the sectors that have the most difficulties to access finance, and thus the number of SME using guarantees provided by Reciprocal Guarantee Societies is increasing[37].

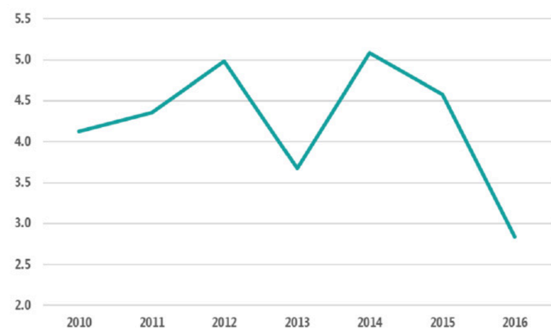
Nevertheless, the economic incentives supported by the ECB and the restructuring of the banking sector have led to an increased availability of credit. As a result, the loans to SMEs have increased in 2016 and were expected to increase from 2017 onwards[38].

Access to housing

> The number of households has been steadily growing since 2010, reaching 18.4 million in 2016 (+4.5%)

At the same time, the share of total population in cities and greater cities has remained relatively constant, having more than half of the Spanish population (51.4%) living in densely-populated area, relatively stable since 2010. On the other hand, the annual mean equivalised net income decreased by 8.9% between 2010 and 2015, reaching EUR 15,408. This decrease affected the amount of residential loans in Spain, which reached EUR 562.8 billion in 2015, 17.2% less than in 2010 (EUR 680.2 billion). As the income in Spain decreased, the **interest rates on mortgages** also declined compared to 2010, from 4.3% in 2010 to 1.4% in 2016 (Figure 10), which stimulated slightly the residential market.

Figure 8: 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%, resulting in a housing bubble[39].

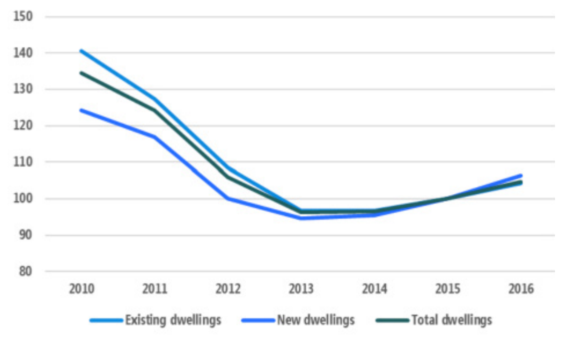
House prices increase ↑ **197%**

Spain experienced one of the highest price increases prior to the economic crisis, with house prices rising by 197%, resulting in a housing bubble[40]. The housing bubble exploded together with the economic crisis, leading to a dramatic decrease in housing prices and construction activities. The **house price index** dropped by 22.2% over 2010-2016, from an index of 134.5 to 104.6. The biggest decrease is registered for existing dwellings (-25.8%), with new dwellings falling by 14.3%,.

However, this downward trend is now starting to recover, as the house price index increased by 0.3% in 2014, 3.6% in 2015 and 4.6% in 2016, after several years of continuous decrease (Figure 11). Moreover, the institute of national statistics registered a housing price index of 112.4 for the last trimester of 2017[41], a 7.5% increase in a year.

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, considerably lower than the 91,500 built in 2010. In fact, only 289,700 dwellings were built between 2010 and 2014, less than what used to be constructed previously in only one year.

Figure 9: House price index in Spain over 2010-2016 (2010=100)



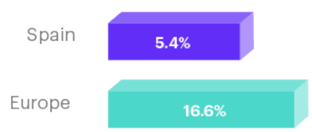
Source: Eurostat, 2017.

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 2016 (78.8%), considerably higher than the EU-28 average, whereas only 22.2% were tenant, out of which 8.4% 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. According to the National Institute of Statistics, in the first nine months of 2017, 354.405 properties were sold, a 13.6% increase with respect to 2016[42].

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 rate[43] of 10.2% in 2016, below the EU-28 average of 11.1%[44]. Several actions have been adopted by the government to address the housing shortage and the issue of affordability and renting (see Policy schemes).

Overall, the housing quality in Spain is good, with the **overcrowding rate**[45] in 2016 being at 5.4%, below the EU-28 average of 16.6%[46]. Similarly, the severe housing deprivation rate[47] reached 1.7% in 2016, below the EU-28 average of 4.8%[48].

Housing overcrowding rate in 2016



Infrastructure

Spain ranks 12th for the quality of its infrastructure, according to the Global Competitiveness report 2017-2018[49]

Same position as last year's. More specifically, it ranks 9th for the Available airline seat kilometres, 11th 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 ranking 16th. Generally, the infrastructure of Spain has been improving since 2010, registering a continuous increase in road density (+10.7%) and seaport capacity (21.7%) between 2010 and 2015[50].

4

Key issues and barriers in the construction sector

Company failure

Spanish construction companies have shown a positive demographic dynamics in 2010-2014 across different subsectors with decreasing amount of company deaths and increasing amount of new companies. Within the narrow construction sector, the number of company deaths decreased by 32.9% between 2010 and 2014, from 60,979 to 40,890. On the other hand, the number of company births increased by 17.1% in the same period, following a slight decrease in 2010-2012 by 8.2% and steady recovery since then, reaching 43,334 **company births** in 2014. The companies created in 2014 in the real estate sub-sector experienced an increase of 40.9% compared with 2010 values. The positive demographics was supported with 32.8% of reduction of **company deaths** during the same period. The architectural and engineering sub-sector experienced lighter changes, with a 9.8% increase in company births and a 19.9% decrease in the number of company deaths during 2010-2014.

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.

Moreover, according to the recent study, in the first semester of 2017, the newly created companies in construction sector represented 17% of new companies in Spanish economy[51].

Trade credit

In Spain, 37.8% of the total **value of B2B sales** was transacted on credit in 2017, slightly below the average for Western Europe (38.8%). This represent a decrease from 2016 and 2015 values (42.8% and 49.3% respectively). In 2017, 43.8% of the total value of domestic sales and 42.2% of the foreign B2B sales were conducted on credit, compared to the EU average of 41.9% for domestic and 39.4% for foreign B2B sales, highlighting the higher perceived risk associated with foreign transactions[52].

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 2014[53]. The trade credit remains more widespread among SMEs, both in terms of credit granted and received.

Late payment

Around 90.2% of Spanish companies[54] experienced late payment of invoices by B2B customers during 2016/2017. Payment terms extended to B2B customers averaged 45 days from the invoice date, significantly above the average for Western Europe (31 days). This is explained by the 18% share of payment transactions averaging more than 60 days of delay, whereas 54.5% of recorded payments averaged a payment term of less than 30 days[55]. 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 country[56].

Within the general economy, in 2017, 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 (31.8%, which is a high decrease compared to 2016 value of 59.5%), complexity of the payment procedure buyer using outstanding debts/ invoices as a form of financing (27.4%[57]) or formal insolvency of the buyer (24.7%). It is interesting to note that formal insolvency of the buyer decreased between 2016 and 2017, from 24.7% to 6.5%.

In 2017, 35% of the businesses in Southern Europe according to the European Payment Report 2017 believe that faster payments from debtors incwould make companies hire more employees[58].

Time and cost of obtaining building permits and licenses

> Spain ranked 123th **globally**, among 190 economies, in 2017 in "Dealing with construction permits", faring worse than in 2016 (113th[59]) .

Spain ranked 123th globally, among 190 economies, in 2017 in **"Dealing with construction permits"**, faring worse than in 2016 (113th)[60]. Building a warehouse requires **15 administrative procedures** (above the OECD average of 12.5 for high-income countries) and takes 208 days (34.5% above the 154.6 days in OECD high-income countries) (Table 5[61]). Namely, **obtaining the building permit** takes 45 days and costs EUR 48,009. 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
Obtain results of geotechnical study / soil test	17 days	EUR 1,875
Request and obtain the official alignment (alineamiento oficial)	14 days	EUR 186
Obtain results of topographical study	7 days	EUR 800
Request and obtain a certificate of compliance (certificado de conformidad)	60 days	EUR 5,902
Obtain approval of draft project proposal and implementation plan (Visado del proyecto básico y proyecto de ejecución)	3 days	EUR 1,155
Request and obtain a building permit (licencia de obras)	45 days	EUR 48,009
Notify labor authority of the start of construction (apertura del centro de trabajo) at the Ministry of Employment, Tourism and Culture	1 day	no charge
Receive initial inspection	1 day	EUR 375
Obtain completion certificate (visado del certificado final de obra -CFO)	3 days	EUR 204
Request final inspection in connection with the occupancy permit (licencia de primera ocupacion y funcionamiento)	1 day	EUR 3,601
Receive final inspection	1 day	no charge
Obtain occupancy permit (licencia de primera ocupación y funcionamiento)	60 days	no charge
Register the new building	18 days	EUR 1,238
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 Word Bank, 2017.

Skills shortage

The number of **job vacancies** in the construction sub-sector decreased by 71.7% from 9,102 to 2,572 in 2010-2015. In line with this trend, the number of vacancies in the real estate sub-sector decreased by 21.4%, during the same period, from 518 in 2010 to 409 in 2015. However, such a decrease had a different impact on the amount of occupied jobs. If the amount of occupied jobs in narrow construction has shrined by 41.0% in 2010-2015, the occupied jobs for real estate have increased by 14.1%, suggesting faster recovery of the latter sub-sector.

Number of job vacancies in the construction sector 2010-2015 ↓ **71.7%**

Adult participation in education and training in the narrow construction sub-sector has been fluctuating in the last years. After the initial increase in 2010-2013, the overall adult participation in trainings for narrow construction has decreased by 17.8% between 2010-2016. On the contrary, the real estate sub-sector has experienced some fluctuations; it grew from 6.5% in 2010 to 14.2% in 2013, and then decreased to 10.3% in 2016. **Tertiary education students in engineering, manufacturing and construction** has increased by 32.8% since 2010. It reached 71,720 students in 2015, highlighting the increasing interest during this period of students in construction and engineering (+41.8%) and manufacturing and processing (+64.1%) activities.

Experts believe that it is necessary to promote the value of the formation in the construction sector with respect to other trainings. The focus in vocational education should be put emphasise quality of the training, attractiveness of the sector and opportunities for supplication in the sector[62].

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 industries[63]. 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 education[64]. Many of these, currently unemployed, will need to be retrained.

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 installers[65]. 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 VET[66].

In addition, in 2015 28.1% of the total **posted workers** received in Spain were from the construction sector[67].

Sector & sub-sector specific issues

Material efficiency and waste management

> Spain produced 110.5 million tonnes of waste in 2014, from which 18.5% come from Construction and Demolition[68]

From the total waste, only 3.4% was processed and transformed into energy, and 36.1% was recycled[69]. In addition, the overall domestic material consumption's per capita in 2016 is estimated to be 8,371 tonnes, below the EU-28 average 13,015[70].

Moreover, 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 2013[71].

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, respectively[72]. These figures highlight the improvements in waste management and monitoring in the Spanish construction sector. However, the current recycling rate is still considerably below the 70% target for 2020 set by the EU Waste Framework Directive. To reach this goal, a new Demolition Waste National Plan was approved in 2016 for the period 2016 – 2022 (Plan Estatal Marco de Gestión De Residuos (PEMAR[73])) . It aims to reduce resources, increase the **recycle rate** and improve its use efficiency. The plan has a specific chapter targeting construction waste and demolition in order to promote actions for reutilization and recycling of construction material to ensure that Spain complies with legal EU objectives. Some objectives include, promoting the use of sustainable and non-dangerous construction materials, study the durability and recycling possibility of the materials, and increasing taxes or applying other regulatory measures in order to encourage not using non-sustainable products. It also focuses on R&D, which will play an important role in achieving the EU recycling target (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 36.8% since 2010, whereas the latter have experience a 17.3% decrease.

5

Innovation in the construction sector

Innovation performance

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 2017[74]. Spain's gap with the EU has increased its performance has declined by 1.8% relative to 2010. The country is particularly weak in SME's innovators and, finance and support. Nevertheless, it is strong in innovation friendly environment and attractive research systems. With respect to 2010 it has worsened particularly with respect to the Venture capital investments indicator (-60.1%) and SMEs product/process innovations (-38.3%).

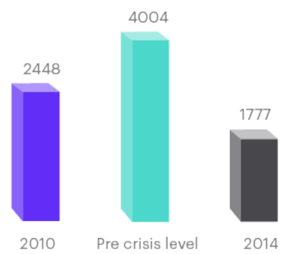
Spain's overall performance in terms of innovation and R&D expenditure is below the EU average, classifying the country as a **Moderate Innovator**, according to the Innovation Union Scoreboard 2017[75].

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 2010 and 2013, following the budget cuts on innovation activities. It started to recover from 2013 (Figure 12), in particular, the biggest increase between 2013-2014 was in real estate activities, it went from EUR 2.2 million to EUR 5.3 million (+147.2%). Nevertheless, in 2014 the BERD for construction, real estate, and professional, scientific and technical activities was still 18.2%, 33.6%, and 9.0% lower than in 2010. In 2016, the total R&D expenditure in the business sector was still 5.2% lower than in 2010[76].

Figure 10: Business enterprise R&D expenditure (BERD) per construction sub-sector in Spain over 2010-2014 (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.14.7% lower than in 2010 (2,448) and 55.6% lower than the pre-crisis level (4,004). The number of FTE for researchers in the real estate declined the most (-53.1%), with only EUR 15 million in 2014 compared to 32 in 2010. On the other hand, the professional and technical activities sub-sector reported the largest number of R&D FTE, with a slight increase in researchers (+7.8%), and the total R&D was only 1.3% lower than in 2010. 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 98 in 2010 to 74 in 2016, although 10 higher than in 2015 (64). In addition, during 2015 the construction sector represented only 1.1% of the total innovation industry investment of Spanish companies, the lowest among all the sectors[77].



Total R&D personnel (full-time equivalents – FTE) in the construction sub-sector

However, four Spanish construction-related firms ranked amongst the top 1,000 EU companies by R&D (industrial sector ICB-3D)

The highest-ranking Acciona (147th place) has spent EUR 193.9 million on R&D in 2016/2017, with an annual R&D investment growth rate of 7.5%[78]. Ferrovial, the Spanish Construction and Materials (C&M) company, and Obrason Huarte Lain were ranked 384, 439, and 514 having spent between EUR 30 to 50 million.

Eco-innovation and digitalisation

> In the recent years, Spain has made progress promoting a more sustainable and digitalized construction, resulting in an overall more innovative construction sector

During the past years, several **construction innovation centres** across the country opened. 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[79]).

Moreover, a strategy supported by the Spanish ministry of infrastructure was launched in 2016 to promote and give information about the implementation of BIM technologies in Spain[80]. This initiative has been set up since the ministry has announced that the use of BIM technologies will be mandatory for building tenders in December 2018 and for civil works by the end of 2019[81].

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 government[80]. Several Autonomic governments have invested to launch their own projects. For example, Vasque Country in 2016 invested nearly EUR 1 million in companies that focuses on innovation and sustainability in residential construction[83].

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. Association is composed of variety of construction agents , including as promoters, investors, developers, manufacturers and universities[84].

According to the National Construction Confederation (Confederacion Nacional de la Construccion - 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 SMEs[85].

In 2017 Construmat,a Construction Industry fair was held,which aims to promote the innovation and digitalization in the construction sector. Presentations and awards were given to the most innovative construction projects. Some of the projects awarded were, a sustainable infrastructure project, also, a pipeline rehabilitation service using ultraviolet lighting, or a project which uses prefabricated ground material blocks for construction[86].

An innovative example for 3D printing in Spain is Cogiro, a robot that is able to create print in 3D buildings up to 130m2 and a 3 meter height. Other innovative projects include drones, laser, cloud computing, virtual reality or big data. New technologies and digitalization will be more and more integrated in the construction sector, bringing new jobs to the market[87].

Innovation in the construction sector will also be supported by the new State Waste Prevention Programme (Programa Estatal de Prevencion de Residuos 2014-2020), which recognises the importance of R&D projects in the minimisation and management of C&D waste[88]. 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 million[89].

Finally, the Spanish government approved a package of measures to support research, development and innovation, for a total investment worth EUR 730 million[90]. 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 fabric[91].

6

National & Regional Policy & Regulatory Framework

Policy schemes

The Spanish government's construction policy schemes focus on social and territorial cohesion, economic competitiveness and sustainability[92].

Following these principles, the strategy has two axis related to the construction sector[93]. 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 Rehabilitacion) presented an action plan for a new housing sector to boost employment, fiscal, social and economic impacts by maximising the renovation budget[94]. 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 Sector[95], aiming to improve the quality and sustainability of the buildings and enhance their accessibility[96]. According to the private organisation Building Performance Institute Europe (BPIE)[97], the Spanish renovation strategy includes a good technical evaluation of the building stock and identifies good energy saving opportunities.

The State Housing Plan 2013-2016 (Plan Estatal de Vivienda 2013-2016) is a plan to promote social rent and rehabilitation, which was extended until 2017. During this plan around 40,000 families have received rent subsidies amounting to 1,118 million euros. In addition, 250,000 receive subsidies to reduce their mortgage payments (775 million)[98]. The **new State Housing Plan 2018-2021**[99] (Plan Estatal de Vivienda 2018-2021) has been launched in early March 2018. The Plan[100] focuses on boosting housing rental aids and facilitating quick access to the enjoyment of "decent and adequate" housing for those with financial difficulties[101]. Moreover, it also promotes a better energy efficiency for the residential sector though the support scheme of up to EUR 12,000 per house. The new State Housing Plan for this period is similar to its predecessor (2013-2016[102]) described below, but includes additional initiatives to support youth (under 35 years). One of the biggest change is that people under 35 will be eligible to receive up to EUR 10,800 financial support. The Plan also suggests an increase of the rental aid for elderly people (up to EUR 200 per month) and a financial aid for people facing eviction. In addition, it included a programme aiming to improve energy efficiency as mentioned previously, which could go up to 12.000 euros per house:

- **Subsidies of agreed loans**[103] 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**[104] 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**[105] 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**[106] 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**[107] 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**[108] 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**[109] 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.

Regarding waste management, Spain included in 22/2011 law[110] to have at least 70 % reuse, recycling and other recovery of non-hazardous construction and demolition waste by 2020.

Insurance and liability related regulations

> No significant changes have been made in liability nor insurance regulations during the past few years. There is no standard form of construction project contract in Spain

A decennial insurance policy providing cover against structural defects is the only insurance that is legally required for residential properties. It is provided by the developer once the works are completed[111].

The **Law of Construction Order**[112] (Ley de Ordenación de la Edificación) governs **liability in construction** with the purpose of protecting the final users against delay and insolvency of property developers[113]. It introduced three different durations of liability[114]. 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 need to start within the two years after the date when the damage occurs[115].

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 insurances exist 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).

According a memorandum of the Law of Construction Order[116], only the last one is mandatory. However, in the future and by a Royal Decree, taking into account the circumstances of the building sector and the insurance sector, the compulsory nature of the other guarantees could be established.

Building regulations

> The Building Technical Code (Código Técnico de la Edificación) lists the basic security and habitability requirements since 2006

It details the main regulations and legislation in the construction sector[117], 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 production[118]. 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 rents[119]. Minor changes were made in 2017 including the security (i.e fire extinction) or energy saving measures[120]. Moreover, since 2013, according to the royal Decree 235/2013[121], housing, retail and office buildings tenants or buyers should receive an Energy Performance Certificate.

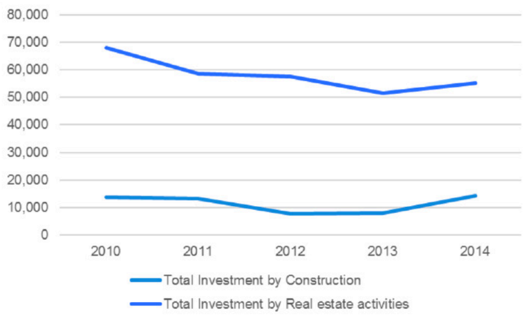
7

Current Status & National Strategy to meet Construction 2020 Objectives

TO 1 - Investment conditions and volumes

Total **investment by the broad construction sector**[122] experienced a significant decline between 2010 and 2013, with investments by the construction and real estate sub-sectors dropping by 49.9% and 24.2% , reaching EUR 18,084 million and EUR 51,47 million, respectively. However, in 2013-2014 the construction subsector experienced a significant recovery in (+75.9%), while the real estate sub-sector seen a 7.1% increase. (Figure 13). In terms of investment in intangible assets, the construction sub-sector invested EUR 285 million in intellectual property products in 2014, whereas the real estate sub-sector invested EUR 2,376 million.

Figure 11: Investment by the Spanish broad construction industry between 2010-2014 (EUR m)



Source: Eurostat, 2017.

Total **investment in construction**[123] has experienced an important downward trend due to the economic crisis, declining by 29.2% between 2010 and 2013. but is on the recovery path since then. It has increased by 8.1% between 2013 to 2016, but is still 23.4% lower than 2010 (Figure 14). All subsectors, declined heavily over thi period 2010-2013, and started to recover as of 2014, but at a slower speed. Investment in dwellings experienced the hardest hit, dropping by 25.6% over 2010-2016. Public finance austerity over these years is one of the reasons for this decrease[124]. 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 engineering[125].

Total investment in construction 2010-2016

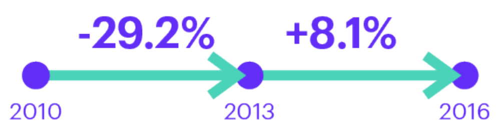
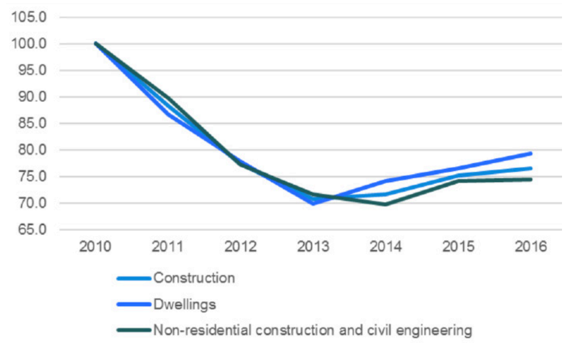


Figure 12: Investment in the Spanish construction sector between 2010-2016 (2010=100)

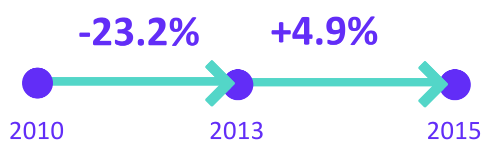


Source: AMECO, 2017.

Total **inland infrastructure investment** as a share of GDP declined from 1.4% in 2010 to 0.7% in 2014. Investment in air infrastructure in Spain dropped the most, a 83.2% decline between 2010 and 2015, from EUR 1.7 billion to EUR 293 million. Investment in road, rail, and sea also fell heavily over the same period, by 65.7%, 46.7%, and 51.0% respectively.

Household renovation spending experienced a decreasing trend from 2010 to 2013, declining by 23.2%. However, it increase, slightly (+4.9%) over the following two years reaching EUR 4.8 billion in 2015, 19.4% below the EUR 6.0 billion registered in 2010, and accounting for 0.7% of household disposable income, slightly lower than the 0.8% recorded in 2010.

Household renovation spending



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 Plan[126]. 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[127], 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 transport[128].

The **use of European funds** is a key element for the development of infrastructure in Spain. The construction businesses in Spain are highly dependent on bank financing[129]. 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 facilities[130]. 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 Barcelona[131]. 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 billion[132].

The Council recommendations for Spain on the 2017 National Reform Programme[133] include facilitation of business performance , since Spanish SMEs have a significantly lower productivity than the EU-28 average. In addition, Council recommends to ensure adequate and sustained investment in R&D.

TO 2 – Skills

> The trends of the recent years consider decrease in early school leaving in Spain, reaching 20.0% in 2016, according to CEDEFOP[134]

In 2017 it decreased to 19.0%, but this indicator remains well above the EU-average (11.1%) being the second largest among the EU-28[135], and above 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%[136]. In order to tackle this issue, the Europe 2020 report for Spain[137] 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%[138];
- 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 workers[139]. 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.

A project to reach the 2020 EU energy objectives in the construction sector was launched called BUILD UP SKILLS Construye 2020. The project aims to promote the qualification of workers in the construction sector, mainly in the building sector, creating courses to increase the professional competencies on Energy Efficiency (EE) and Renewable Energies installation (EERR) in buildings[140].

The **Spanish Construction Labour Foundation** (Fundación Laboral de la Construcción –FLC) a bipartite non-for profit body, created by social partners in construction sector, introduced a skill training on innovative techniques and tools for energy efficiency building[141]. 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 professionals[142].

In addition, the Spanish Construction Labour Foundation offers several courses (online and/or presential) for a high variety of construction jobs such as plumbing, machinery use, or working in risky conditions courses[143]. This Foundation, during the 6th General Agreement from the construction sector highlighted the importance of promoting, developing, adapting and completing the professional qualifications of the workers in the sector[144].

Moreover, in 2010 an employment portal for construction sector[145] was created by the Spanish Construction Labour Foundation. In 2016, it published around 100 new jobs every month, with 1400 companies registered and 70,000 applicants. It has increased heavily during the past years. The job positions mainly target builders, plumbers, masonry officers, supervisors, and machinery drivers. It is interesting to highlight that 30% of the companies registered have between 1 and 5 workers, and 25% between 10 and 50. In addition, the most common user is between 30 and 40 years old, unemployed, and with the minimum mandatory education level[146].

In 2014, the **European Investment Bank** granted a EUR 200 million loan to tackle education investment needs and limit the skill shortage in Spain[147]. 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 region[148]. 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 jobs[149]. 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

> 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**.

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 Commission[150].

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 year[151]. This plan is managed by the Institute for Diversification and Energy Savings[152] (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.

In addition, as explained in Section 6, the State Housing Plan 2018-2021 (Plan Estatal de Vivienda 2018-2021, includes a programme for improvedenergy efficiency, with aids up to EUR 12.000 per household[153].

The Green Building Council Spain developed the VERDE methodology, to evaluate and certify sustainable buildings according to the Building Technical Code approach[154].

Regional initiatives also support sustainable construction. In Andalusia, the Sustainable construction support programme[155] (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**.

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 works[156] until The Law on Sustainable Economy amended it in 2011[157].

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 relationships[158]. 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 JCCAE 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.

The construction sector is regulated by a broad set of national laws across different fields (public procurement, urban planning, environment, labour legislation, etc.). Therefore, 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 addition, several fraud cases have been detected in Spain during the past years, in particular in the mismanagement of urban planning and construction. As a result, companies have cited corruption as a business impediment in Spain[159].

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 procedure[160].

Despite the above, Spain has a strong presence in the 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[161]) in 2013[162]. 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 sector[163].

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 design[164].

TO 5 - International competitiveness

> Spain ranked 34nd in the Global Competitiveness Index 2017-18, compared to 32nd in 2016-17 and 35th in 2014-15[165].

The country has important strengths, such as excellent infrastructure (12th) and a good domestic market size (17th). 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)[166].

Spanish construction companies are leaders in the international market. For instance, ACS ranks second in the EU in terms of total sales, right after Vinci[167]. ACS has also been ranked 7th in ENR's 2017 Top 100 Global Contractors, having other six Spanish construction companies in the list[168]. In addition, five other firms are part of the 30 biggest companies for infrastructure works in Europe[169]. Among the SEOPAN[170] members, 67% of the **non-domestic turnover** comes from outside Europe[171], particularly from the American continent (25% from North America and 29% from Central and South America)[172]. The activity of Spanish construction companies is also growing in the Middle East, which represented 18% of the contracts secured in 2013[173]. 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)[174].

However, according to the 2016 Global report presented by SEOPAN, total sales at national level have decreased for the ninth consecutive year, reaching EUR 4,321 million in 2016, compared to 14,421 in 2010[175].

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

However, **the Spanish general economy** is predicted to grow by 5.2% in 2018 compared to 2016, with the GDP predicted to reach its highest in last two decades.

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 by 5.2% in 2018 compared to 2016, with the GDP predicted to reach its highest in last two decades. 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.

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 (60.0%) and employees (63.8%). As result, total number of companies in the broad construction sector is expected to decrease by 2.0% 2018, reaching 640,350 companies. Similarly, the **number of workers** employed in the broad construction sector is projected to decrease by 2.6% in 2018 compared to 2016, reaching 1.6 million.

Similarly, the **value added** of the broad construction is projected to decrease in 2018, reaching EUR 65,801 million in 2018.. In addition, during 2016- 2018 it is foreseen that the total **turnover** will increase in all subsectors except of narrow construction, and consequently will decrease by around -2.2% .

> However, according to ITEC, it is expected that the construction sector grow its **GDP** percentage from 2018 to 2020 by around 2.3% per year.

However, according to ITEC, it is expected that the construction sector grow its **GDP** percentage from 2018 to 2020 by around 2.3% per year. Residential building would have the highest increase among the subsectors, followed by civil engineering activities and non-residential building. These predictions assume that the political tensions in the country will not increase[176]. Moreover, other sources also suggest an increase of the construction sector share of GDP around 4% by 2020 compared to 2017's figures[177].

Maintenance and rehabilitation works, particularly of **non-residential buildings**, are expected to continue growing steadily, increasing up to 2.1% in 2018 and 2019, in line with the government's efforts in terms of energy efficiency and sustainable construction[178]. 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 average[179].

Concerning **residential housing**, 140,000 new residential dwellings annually will need to be constructed up to 2025 in order to satisfy internal demand[180]. 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.

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. Moreover, the political crisis in Spain could affect negatively the construction sector[181], in particular real estate has already started to suffer from this situation[182]. 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 Obrascon Huarte Lain (OHL) and Fomento de Construcciones y Contratas (FCC) in Algeria, or Isolux Corsan and Grupo Aldesa in Brazil and Mexico.

The future of the construction sector depends on internationalisation and innovation. Therefore, the development of the sector will be influenced by the output of the current (and future) activities going on to promote these two actions[183].

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1 Please note that this 2016 data is a nowcast – please refer to the methodology notes for further details

2 Please note that the share of each sub-sector in the value added of the broad construction sector should not be compared to the shares of the Gross Value Added in the GDP, since the GDP also includes taxes and excludes subsidies.

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