European Commission

European Construction Sector Observatory

Country profile Lithuania

June 2018

In a nutshell

The Lithuanian economy has been recovering since 2010, exceeding the 2008 pre-crisis level in 2016. As for **the construction sector**, mild growth is predicted for the coming years, although it will slow down considerably up until 2020 due to the limited opportunities on the domestic market. GDP grew 2.2% in 2016, mostly driven by private consumption and recovering exports. The number of people employed in the broad construction sector increased by 23.4% between 2010 and 2016. Turnover increased by 54.0% from 2010 to 2016, from EUR 4.6 billion to EUR 7.1 billion, but still remains far below 2008 figures.

Number of people employed in the broad construction sector evolution 2010-2016 ↑ **23.4%**

Although the crisis led to a sharp decline in **housing investment** and in **house prices**, since 2010 economic growth has picked up. The increase in house prices is expected to continue throughout 2017, but only to a modest degree and still remaining far below the pre-crisis levels. In 2016 total 8,081 building permits were issued for the residential and non-residential buildings, which was 15.7% more than in 2015, showing that the housing market is on an improvement track. Given the very limited supply of affordable rental housing, the government introduced the **Municipal Social Housing Development Action Plan 2015-2020** to support the construction and renovation of social housing units through a budget of EUR 58.7 million.

Number of building permits evolution 2015-2016 ↑ **15.7%**

To boost **investment in infrastructure**, EUR 1.1 billion of Lithuania's 2014-2020 EU funding will be dedicated to the development of transport infrastructure. **The Baltic Energy and Infrastructure Fund (BEIF)**, with a size of EUR 100 million, was set up in 2016 to finance energy and infrastructure projects. The EIB is also a key player, financing the modernisation of the country's railway with a EUR 68 million loan for the extension, renewal and electrification of several railway tracks. In addition, a EUR 50 million loan facility dedicated to Vilnius urban infrastructure was set up for road improvements, city centre rehabilitation and renovation of schools and kindergartens.

Lithuania is also making progress with respect to **energy efficiency in buildings**, owing to funding schemes such as the Programme for the Renovation (Modernisation) of Multi-apartment Houses managed through the Multi-apartment building modernisation fund (DNMF), which provides soft loans through its EUR 74 million allocation. Moreover, the Energy Efficiency Fund (ENEF), funded by the ERDF with EUR 79.6 million, provides loans for the renovation of central government buildings and guarantees for street lighting modernisation projects. Various initiatives and strategies have also been introduced to develop digital construction technologies such as BIM.

> The outlook for the Lithuanian construction sector is moderate, with growth being forecast an annual average rate of 2.6% between 2017 and 2025.

The outlook for the Lithuanian construction sector is moderate, with growth being forecast an annual average rate of 2.6% between 2017 and 2025. Transport infrastructure, housing renovation and non-residential construction will be the main drivers for its development, although limited public funds, moderate demand and shortages of skilled building construction workers constitute main obstacles to its future growth.

1
Key Figures

The number of **enterprises** in the broad construction sector in Lithuania totalled 44,820 in 2016[1] (Figure 1). Specifically, 58.4% of these belonged to the narrow construction sector, 22.9% were dedicated to real estate activities, 9.6% to manufacturing and 9.1% to architectural and engineering activities. The overall number of enterprises in the broad construction sector grew substantially by 82.8% between 2010 and 2016. The number of companies in the narrow construction doubled with an increase rate of 114.6% between 2010 and 2016, yet companies in real estate followed the same trend but grew less substantially by 52.7%. The overall **production** in the construction sector increased by 29.0% between 2010 and 2016, followed by considerable growth of 71.0% in the production of buildings. Production in civil engineering works rose by 33.0% in 2014, reaching the highest point and dropped by 28.0% in 2016 compared to the 2014 levels (Figure 2).

Repartition of number of enterprises in the broad construction sector by sector in 2016

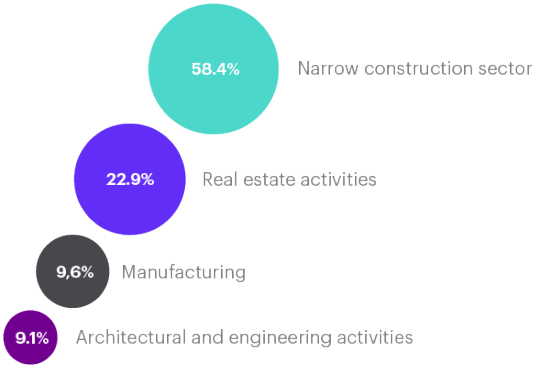
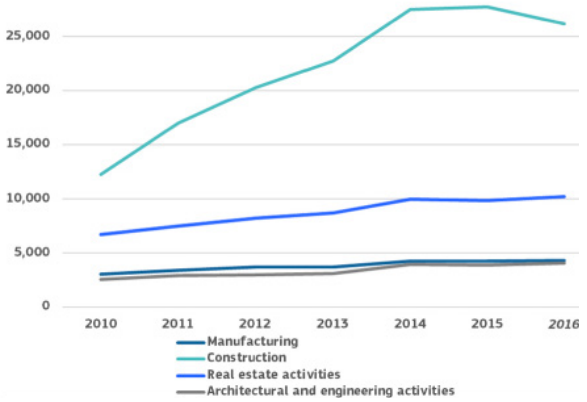
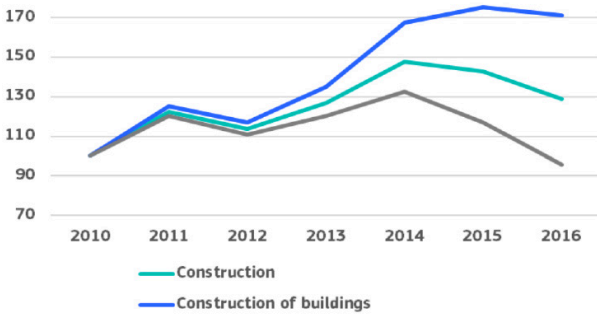


Figure 1: Number of enterprises in the construction sector in Lithuania between 2010-2016



Source: Eurostat, 2017.

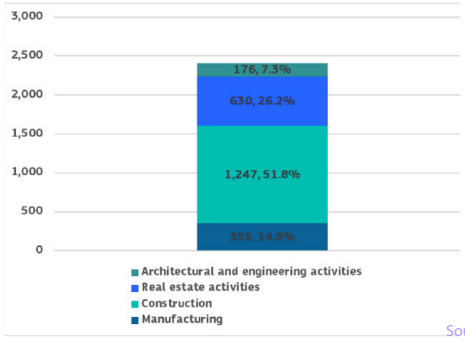
Figure 2: Volume index of production in construction sector Lithuania between 2010-2016 (2010=100)



Source: Eurostat, 2017.

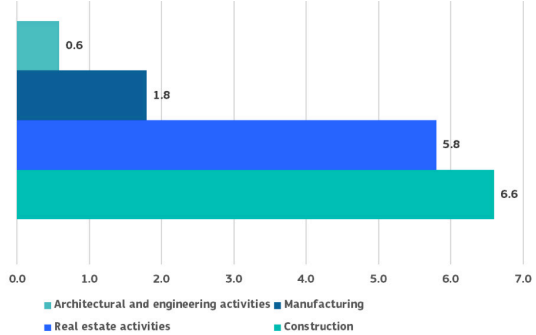
In 2016[2], the total **value added** of the broad construction sector was EUR 2.4 billion (Figure 3), with the narrow construction sub-sector having the largest share (51.8.6%, i.e. EUR 1.2 billion). It was followed by real estate activities with a share of 26.2%, manufacturing with 14.8% and architectural and engineering activities with 7.3%. The share of gross value added of the broad construction sector in the GDP[3] reached 14.8% in 2014[4], slightly below the EU-28 average of 16.9% with narrow construction having the highest share (Figure 4).

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



Source: Eurostat, 2017.

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



Source: Eurostat, 2017.

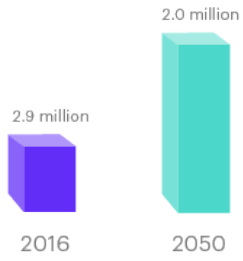
2
Macroeconomic Indicators

Despite a decline as a result of the crisis, Lithuania's economy has been recovering ever since, driven mainly by international trade and exports of machinery and equipment manufacturing, metal products, wood and furniture.

Despite a decline as a result of the crisis, Lithuania's economy has been recovering ever since, driven mainly by international trade and exports of machinery and equipment manufacturing, metal products, wood and furniture[5]. Lithuania's **GDP** reached EUR 34.4 billion in 2016, a 2.3% growth compared to 2015 and 22.8% to 2010. The **potential GDP** took on almost the same value of EUR 34.1 billion in 2016, indicating that the Lithuanian economy ran almost at full capacity. It is expected to grow by 2.4% in 2017 and by 2.7% in 2018, reaching 35.9 billion. Lithuanian inflation experienced strong fluctuations during recent years. After the peak of 4.1%, which was recorded in 2011, the **inflation rate** has been declining, and entered negative territory of -0.7% in 2015. However, in 2016 it went up and stood at 0.7% in 2016. According to Eurostat, the average **unemployment rate** in Lithuania stood at 7.5% in 2016, almost in line with the EU-28 average of 7.6%. This is well above the 2010 level of 16.4% and has been improving ever since. Youth unemployment (below the age of 25) stood at 14.5% in 2016, below the EU-28 average of 18.7%.

Lithuania's GDP evolution 2010-2016 ↑ **22.8%**

In terms of demographics, the total **population** of Lithuania was 2.9 million in 2016, however, this figure is forecast to decrease by 4.8% until 2020, by 16.5% until 2030 and by 32.2% until 2050, ultimately reaching 2.0 million. In addition to the declining demographics, **net migration** has also been negative for the past decade, with an average of 32,000 people emigrating each year over 2010-2016. Lithuania's w**orking age population**, which made up 66.4% of the total in 2016, will have shrunk to 53.7% by 2050, while people aged 65 or older will make up 32.3% of the total. The decreasing and ageing population challenges Lithuania's growth prospects and fiscal balance[6].



Total population in 2016 and forecast for 2050

In 2016, **general government expenditure** as a share of GDP in Lithuania was 34.2%. The **general government deficit** as a share of GDP amounted to 0.3% in 2016, being one of the top-performing countries. Government deficit constantly improved after the peak of 2011, where it reached -8.9%, emphasising the fiscal conservatism of Lithuania. Furthermore, general **government gross debt** amounted to 40.2% in 2016. Although higher than in 2010 (36.2%), this figure is still one of the lowest of the EU-28. Despite low government deficits, Lithuania's fiscal framework still presents some concerns about the adherence to medium-term fiscal objectives[7].

According to the Global Competitiveness Report 2017-2018[8], Lithuania ranks only 52nd in terms of financial market development, 52nd in terms of ease to access to loans and 62nd regarding venture capital availability.

According to the SAFE Report 2016[9], Lithuania reports the largest number of small loans, together with Croatia, and it is the second country with the highest flat-out rejection rate of 20% after Greece (21%). **Access to finance** for start-ups and SMEs represents a potential bottleneck for investments, and the high financing costs may prevent them from getting a loan[10]. In addition, given the small size of the capital market, there are limited alternative financing sources in the country, however the government launched some initiatives to facilitate of issuance of corporate bonds and adjustments to the Law that would make it easier for private companies to offer bonds publicly[11]. **Outstanding loans to non-financial corporations** have decreased by 3.3% over 2010-2016, from EUR 8,427 billion to EUR 8,148 billion. The European Investment Fund (EIF) also plays an active role in providing advanced funding opportunities for SMEs[12]. The EIF has designed and launched a broad number of debt and equity financial instruments, mainly implemented under JEREMIE (Joint European Resources for Micro to Medium Enterprises), whose management has been transferred to **INVEGA**. INVEGA is a public body tasked with developing SMEs in Lithuania, acting as a key element of the national strategy to facilitate the access to finance[13].

> Lithuania ranks 27th of 190 countries in 2017 in terms of starting business[14].

It takes 4 procedures and on average 5.5 days until a firm registration is completed, below the OECD high income average (4.9 procedures and 8.5 days). Furthermore, it only costs on average 0.6% of income per capita to start a business, as compared to 4.4% in high income OECD countries. However, the paid-in minimum capital required to start a business is 19.3% of income per capita compared to 8.7% for OECD high income countries[15]. Tax rates and inefficient government bureaucracy are the most problematic factors for doing business in Lithuania. Lithuania performs above the EU average in terms of entrepreneurship and continues Entrepreneurship promotion[16]. The country introduced various initiatives and policies, such as the **Entrepreneurship Action Plan 2014-2020**, that aims to promote entrepreneurship among young people and women, as well as improve the regulatory environment and provide better opportunities for 'second chance' entrepreneurs; **"Social Business Concept"** (2015) to stimulate social business and social innovation, **"Social Business Promotion Action Plan 2015-2017"** to set a favourable environment for social businesses[17]. Furthermore, the Lithuanian government used part of its European Social Fund (ESF) envelope to foster entrepreneurship by introducing a financial instrument, the Entrepreneurship Promotion Fund (EPF). In this framework, a total of EUR 14.5 million of ESF funds was distributed to SMEs and Start-ups in Lithuania through low-interest loans. In addition, SMEs were also offered free training and consultations on how to strengthen their business skills[18].

3

Key economic drivers of the construction sector

Productivity

The **labour productivity** in the broad construction sector has shown an increasing trend of 44.7% between 2010 and 2014[19], from EUR 9,940 to EUR 14,690. All construction sub-sectors experienced a substantial increase of labour productivity over 40% during the period of 2010-2016[20]. Namely, the construction sub-sector recorded the largest increase of 54.5% in productivity, from EUR 8,200 to EUR 12,700 (Figure 7). The labour productivity in manufacturing grew by 49.0% over the same period, from EUR 9,300 to 13,900, recording the second highest increase. Productivity in real estate rose by 44.3%, from EUR 19,100 to EUR 27,600 and architectural and engineering activities incremented by 40.0%, from EUR 9,100 to EUR 12,700 over the period of 2010-2016.

Labour productivity in the broad construction sector

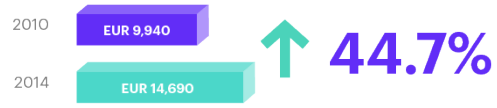
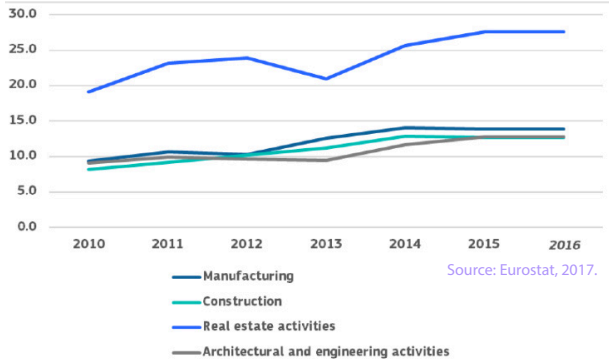


Figure 5: Labour productivity in the construction sector in Lithuania over 2010-2016 (EUR k)



Source: Eurostat, 2017.

Profitability

The total **turnover** in the broad construction industry reached EUR 7.1 billion in 2016[21]. The construction industry was highly impacted by the economic crisis, however it started recovering and growing ever since. It increased by 54.0% from 2010 to 2016, from EUR 4.6 billion to EUR 7.1 billion, but still remains far below 2008 figures. The narrow construction sub-sector accounted for 59.4% of the total turnover of the sector in 2016, followed by 18.0% of real estate activities and 17.3% of manufacturing. Consequently, the gross operating surplus of the broad construction sector increased by 135.2% from EUR 481 million to EUR 1.1 billion between 2010 and 2014[22]. In addition, construction costs have been steadily increasing since 2010 (Figure 8). Since the turnover and **gross operating surplus** substantially increase, and construction costs continued to rise, the gross operating rate of the broad construction sector[23] grew overall by 41.5% from 10.4 in 2010 to 14.7 in 2014, which was slightly lower than the EU-28 average of 17.9[24].

Total turnover in the broad construction industry

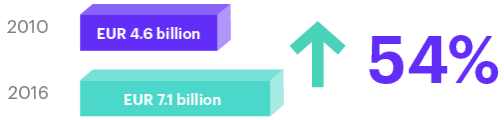
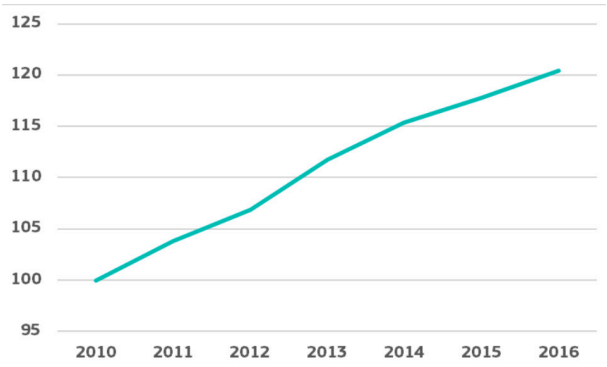


Figure 6: Construction cost index in Lithuania over 2010-2016 (2010=100)



Source: Eurostat, 2017.

Employment

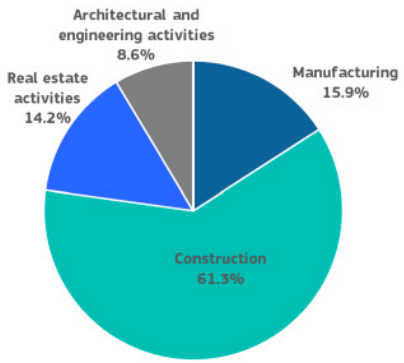
The number of **employees** in the broad construction sector reached 160,752 in 2016[25]. The number of persons employed in the broad construction sector increased by 23.4% between 2010 and 2016. The construction sub-sector employed 61.3% of the total construction workforce in 2016[26] (Figure 7) and it has experienced a 21.1% increase since 2010. Within the construction sub-sector, building completion and finishing saw a particular rise, with the number of people employed increasing by 82.2% between 2010 and 2016.

Number of persons employed in the broad construction sector evolution 2010-2016 ↑ **23.4%**

As for **employment by specific occupation**, the manufacturing sub-sector experience a sharp decrease in managers (-16.2%), service and sales workers (-14.8%) in 2010-2016. Contrary, the demand in workforce has increased for plant and machine operators and assemblers (+35.5%) and professionals (+26.1%). The structure of employment in narrow construction sector shows decreasing demand for plant and machine operators and assemblers (-24.3%) and managers (-3.2%) and increasing employment for craft and related trade workers (+32.2%) and elementary occupations (+24.3%).

Of the employees in the narrow construction sector, 17,900 were **self-employed** in 2016, representing 12.2% of the self-employed workforce in the general economy, compared to 6.4% in 2010 and to 12.9% of the EU-28 average in 2016. This figure has substantially increased by 152.1% from 7,800 in 2010 to 17,900. Moreover, there has been a 18.4% increase in full-time employment in the construction sub-sector between 2010 and 2016, from 83,700 to 99,100.

Figure 7: Percentage of people employed by construction sub-sector in Lithuania in 2016

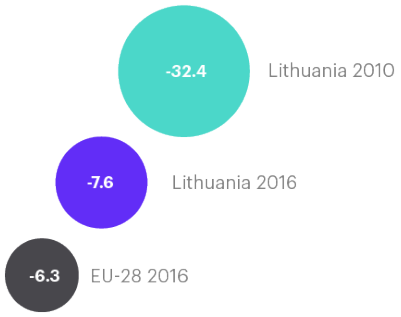


Source: Eurostat, 2017.

Business confidence

In the aftermath of the crisis, although all confidence indicators have generally improved, they still remained in negative territory and below the EU-28 average between 2010 and 2016. Specifically, the **consumer confidence** indicator went up from -32.4 to -7.6, below the EU-28 average of -6.3 in 2016. The **industry confidence** indicator rose up from -13.1 in 2010 to -7.4 in 2016, compared to the EU-28 average of -2.5, and **construction confidence** indicator slightly improved from -41.7 to -27.5, respectively, compared to the EU-28 average of -13.9. This reflects the continuous risk perception in the construction sector and suggests that investors are cautious about making long-term commitments.

The consumer confidence



According to the **Lithuanian Builders Association**, the prospects of the construction sector in Lithuania are strongly tied to the effective use of EU structural funds. Conversely, relying only on domestic resources to generate business would be difficult to sustain[27]. However, in 2016 business confidence has been increasing and going towards more positive direction, more than in other sectors such as production and services[28].

Domestic sales

The highest-ranked construction products relative to their level of domestic consumption in Lithuania accounted for 47.7% of domestic sales in 2015 (Table 3). The ranking of the five **most domestically sold product** groups has been relatively constant since 2010, except for "Portland cement, aluminous cement, slag cement and similar hydraulic cements (group 2351112), which was replaced by "Prefabricated buildings of metal" in 2015. The structure of domestic sales in Lithuania differs to the EU average and only three similar product groups lead the sales in both markets.

Table 1: 5 most domestically sold construction products in Lithuania and in the EU in 2015

Lithuania			EU-28
Product	Value (EUR m)	Share in construction product domestic sales (%)	Product
Particle boards and similar boards of wood (group 162113)	121.3	17.1	Other structures (group 251123)
Prefabricated buildings of metal (group 251110)	57.5	8.1	Doors, windows, etc. (group 251210)
Fibreboard of wood or other ligneous materials (group 162114)	56.6	8.0	Ready-mixed concrete (group 236310)
Prefabricated structural components for building or civil engineering (236112)	52.4	7.4	Prefabricated buildings of metal (group 251110)
Ready-mixed concrete (group 236310)	50.9	7.2	Prefabricated structural components for building or civil engineering, etc.(group 236112)

Source: PRODCOM, 2017.

Export of construction-related products and services

The top-five **most exported construction products** account for 65.8% of all construction products exports in 2015 (Table 4). Since 2010, this ranking has not changed. The top 5 most exported construction products from Lithuania and the EU-28 are summarised in Table 2.

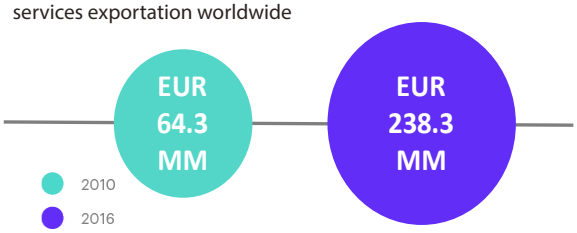
Table 2: 5 most exported construction products in Lithuania and in the EU in 2015

Lithuania			EU-28
Product	Value (EUR m)	Share in construction product domestic sales (%)	Product
Assembled parquet panels (162210)	134.8	18.8	Ceramic tiles and flags (group 233110)
Prefabricated wooden buildings (162320)	118.0	16.5	Other structures (group 251123)
Pallets, box pallets and other load boards of wood (group 162411)	79.0	11.0	Fibreboard of wood or other ligneous materials (group 162114)
Windows, French windows and their frames (162311)	77.6	10.8	Marble, travertine, etc. (group 237011)
Other structures and parts of structures (251123)	61.5	8.6	Doors, windows, etc. (group 251210)

Source: PRODCOM, 2017.

In terms of **cross-border provision of construction services**, in 2016 Lithuania exported EUR 238.3 million worldwide, which represents an increase by 270.6% compared to 2010 (EUR 64.3 million). Exports to the EU-28 stood at 166.9 million in the same year. In parallel, Lithuania imported EUR 63.1 million worth of construction services worldwide, a considerable increase compared to 2010 (+180.4%). Imports from the EU-28 reached 58.5 million. As a result, Lithuania generated a trade surplus of 175.2 million in 2016.

Cross-border provision of construction services exportation worldwide



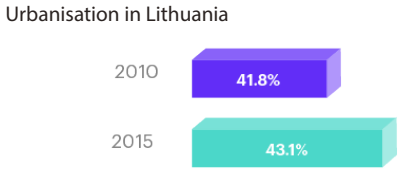
Access to finance in the construction sector

In Lithuania, **outstanding loans to the construction industry** have dropped importantly (-55.7%) between 2011 and 2016, from EUR 1 billion to EUR 444.1 million. In addition, in 2016, loans to companies in manufacturing, trade, transport, construction, and real estate activities accounted for the largest share of bank loans to non-financial corporations. However, economic activities related to real estate and construction are considered the most sensitive to economic shocks, as assessed by the stress tests run by the Lithuanian Central Bank in the Financial Stability Review 2017[29]. As the construction companies seem to be riskier compared to other sectors, lending is usually processed with extra caution. In an economic shock scenario the non-performing loan indicator for the construction and real estate sectors rises by 20% compared to the baseline, indicating the higher risks linked to these sectors[30]. The Central Bank also explains that the construction and real estate sector take up close to 50% of the credit unions'[31] loan portfolio to non-financial corporations. This increases risks for credit unions, particularly considered that companies in the broad construction sector are highly sensitive to business cycle. Therefore, the weaker financial situation of these companies can lead to considerable losses to credit unions[32].

Outstanding loans to the construction industry evolution 2011-2016 ↓ **55.7%**

Access to housing

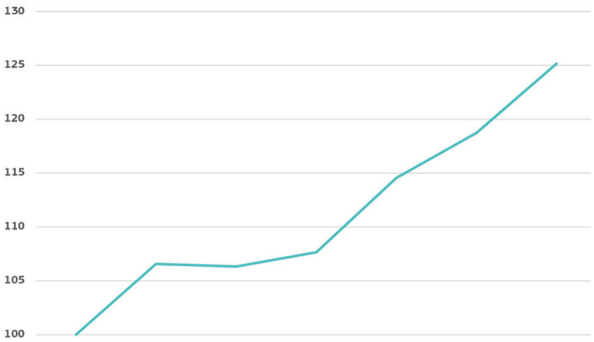
The **urbanisation rate** in Lithuania was at 43.1% in 2015[33], slightly above the figures registered in 2010 (41.8%). At the same time, the number of **households** in Lithuania increased by a total of 3.2% from 2010 until 2016, ultimately reaching 1.4 million in 2016. However, the population decreased by 6.7% during the same period of time, from 3.1 million in 2010 to 2.9 million in 2016. In parallel, the **median equivalised net income** increased by 40.1% between 2010 and 2016 from EUR 4,030 to EUR 5,645. However, it is still considerably lower than the EU-28 average of EUR 16,511 and is one of the lowest in the EU after Romania, Bulgaria and Hungary.



Although the crisis led to a sharp decline in investment and in house prices, since 2010 economic growth has picked up. The **house price index** increased by 25.2% between 2010 and 2016 (Figure 12). The increase in house prices is expected to continue throughout 2017, but only to a modest degree and still remaining far below the pre-crisis levels[34]. Furthermore, **lending to households** has been fluctuating since 2010 however recovered rapidly from 2013 on, reaching EUR 6.1 billion in 2015[35].

House price index evolution 2010 - 2016 ↑ **25.2%**

Figure 8: Mortgage rates for loans for over 5 years' original maturity (%) (2008-2016)

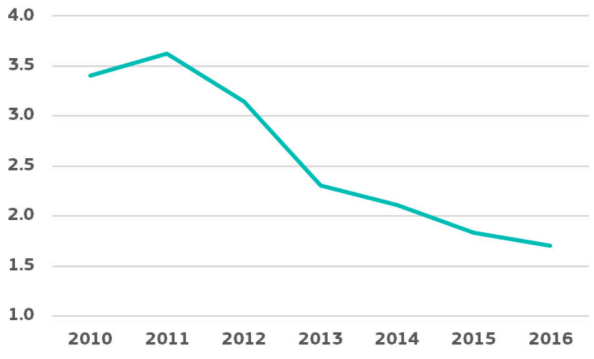


Source: ECB MFI Interest Rate Statistics, 2017.

At the same time, in 2016 total 8,081 **building permits** were issued for the residential and non-residential buildings. 88.7% of all permits were granted for residential buildings and it was 15.7% more than in 2015. It resulted in completing 8,166 individual houses, 286 multi-apartment houses and 6 dormitories, showing that the housing market is on an improvement track[36].

After a continuous decline since 2008, the **mortgage rates** in Lithuania have been decreasing ever since and reached a historical low in 2016. The mortgage rate for over 5 years of original maturity reached 1.7% in 2016, after falling from 3.4% in 2010 (Figure 11).

Figure 9: Mortgage rates for loans for over 5 years' original maturity (%) (2008-2016)



Source: Eurostat, 2017.

The size of the rental market is relatively small, as only **10.6% of the households in the country are tenants in 2015**[37]. However, citizens below 60% of median equivalised income are more likely to rent (18.1%) than those citizens above 60% of median equivalised income (8.5%), a trend that has remained stable during the last years. Furthermore, the availability of social housing is limited, despite growing demand since the mid-2000s. It is expected that by 2020 additional 25,000-30,000 social dwellings will be needed[38]. In order to tackle the problem, municipalities in major cities are involved in the Social Housing Development Program, which aims to allocate EUR 58.7 million for renewing 500 and building 1,105 new dwellings for social housing purposes[39]. Finally, the overcrowding rate[40] in Lithuania has dropped importantly during the last decade, from 67.4% in 2005 to 38.9% in 2015, yet still being significantly above the EU-28 average of 23.9%[41].

Infrastructure

> In the Global Competitiveness Report 2017-2018[42] Lithuania ranked 47th in terms of general infrastructure development. It performed especially well in quality of railroad infrastructure (27th), as well as quality of overall infrastructure (29th).

These results are expected to improve in the years to come with further progress in the completion of the **TEN-T Core Network**, as well as the support of other international organisations, such as the Nordic Investment Bank (see TO 1 - Investment conditions and volumes). In contrast, further efforts are required to improve the quality of air transport (68th).

4

Key issues and barriers in the construction sector

Company failure

In the aftermath of the crisis, the rapid recovery has been seen in the number of **company births** in the Lithuanian narrow construction sector that substantially increased by 145.0% over 2010-2014[43], from 3,933 to 9,634. However, in line with the downturn of the sector, the number of **company deaths** drastically dropped by 531.0% from 2010 to 2014, reaching 21,096. Consequently, a number of company deaths outgrew a number of company births, meaning that the narrow construction sector still faces difficulties after the crisis.

The number of company births in the Lithuanian construction sector 2010-2014

The real estate sub-sector has followed a similar trend. Over the same period of 2010-2014, it experienced a 66.4% growth in the number of births, reaching a record high of 2,226 companies in 2014. On the contrary, the number of company deaths drastically grew over 2010-2014, from 1,138 to 5,930, recording the highest company deaths in 2014.

Finally, the number of births of enterprises in the architectural and engineering activities sub-sector, has grown in a steady rate, reaching 1,161 in 2014, despite a minimal decrease in 2013. The number of company deaths also more than doubled in 2014 reaching 1,968.

Trade credit

The use of **trade credit** remains limited in Lithuania, as only 27% of companies consider it a relevant source of finance, according to the 2016 SAFE Survey[44]. This is far below the EU average, where 35% of survey respondents consider trade credit relevant for their business. In addition, 19% of total respondents had used this source of finance during the 6 months' prior the survey, at the same level as EU average. However, according to the same survey, 91% of respondents believe the availability of trade credit will increase or remain unchanged over the next months, revealing an increased willingness of companies to use trade credit.

Late payment

> Lithuania ranks first in terms of payment practices in 2016, according to the European Payment Risk Index, highlighting low-risk and speedy payment practices[45].

The average contractual payment terms depend of the type of business. In business-to-consumer (B2C) transactions, the average contractual payment is around 20 days. Regarding business-to-business (B2B) transactions, the average contractual payment terms is around 27 days, whereas for the public administration it is 28 days. However, the average time in which costumers actually pay is shorter (or same) than the contractual agreement for the three types of transactions: 15 days for B2C, 27 days for B2B and 29 days for the public sector. Overall, the negative consequences of **late payments** are minor. This positive trend is expected to continue on the next years, as only 7% of the companies interviewed see risks increasing from their companies' debtors in the next 12 months, far below the average perception reported in all EU Member States 15%)[46].

In addition, Lithuania has transposed the 2011 **Late Payments directive**[47] into Lithuanian national law with the law on prevention of late payments in commercial transactions[48]. The 2011 late payments directive was also transposed by the law on payment for agriculture products (Articles 5, 6, 7, 11, 12, and 13)[49].

Time and cost of obtaining building permits and licenses

> According to the World Bank's Doing Business report 2018, the Lithuania ranks 12th in terms of "dealing with construction permits", four position above compared to the previous year[50].

The number of procedures required to obtain a work permit is 13, which is similar to the OECD average of 12.5. Nevertheless, only 75 days are needed, on average, to build a warehouse, significantly below the average for the OECD countries (154.6 days). In addition, the majority of these procedures are free of charge, and therefore the cost of obtaining these construction permits is five times lower than the average for the OECD (0.3% of the warehouse value compared to 1.6%).

Table 3: Construction procedures timing and costs in Lithuania

Procedure	Time to complete	Associated costs
1. Request and obtain certificate of ownership of the land plot	0,5 days	EUR 3
2. Obtain topographic survey of land plot	21 days	EUR 175
3. Request and obtain special architectural requirements for construction works	21 days	no charge
4. Request and obtain design requirements for water and sewage connection	14 days	no charge
5. Request and obtain approval of the design documentation and obtain the building permit	14 days	EUR 72
6. Request and obtain water and sewerage connection approval and sign contract	7 days	EUR 348
7. Request and obtain deeds of inspection and testing of engineering networks for water and sewage connection	5 dasy	no charge
8. Connect to water services	5 days	no charge
9. Hire private cadastre company and obtain cadastral measurement of the building	5 days	EUR 579
10. Request certificate of completion of construction	0,5 days	no charge
11. Receive final inspection	1 day	no charge
12. Obtain the certificate of completion of construction	14 days	no charge
13. Register with the Land and Real Property Registry	1 day	EUR 749

Source: Doing Business overview for Lithuania, Word Bank, 2018.

Skills shortage

After the economic crisis, the **number of job vacancies** in the narrow construction sub-sector significantly increased by 80.9% over 2010-2015, reaching 776 vacancies in 2015. Regarding the real estate sub-sector, the number of vacancies increased by 36.1% over the same period of time, with a peak of 131 job vacancies in 2012. During this period, adult participation in education and training on the field of narrow construction decreased minimally, from 6.1% in 2011 to 5.6% in 2015[51]. The number of tertiary students in engineering, manufacturing and construction, specifically in architecture and building, decreased by 40.1% between 2010 and 2015, from 2,507 to 1,501[52].

Number of job vacancies in the narrow construction sub-sector 2010-2015 ↑ 80.9%

In Lithuania, construction workers, bricklayers and professionals in the furniture industry rank among the professions with highest demand[53]. Nevertheless, the construction sector is affected by both skilled and unskilled labour shortages, mainly for building construction labourers. According to the study published by Lithuanian Confederation of Industrialists (Lietuvos pramoninkų konfederacija (LPK)), welders, mechanics, engineers, electricians, painters, locksmiths, assembles, millers, tailors, trimmers, plastic moulding specialists and assisting workers in production were also on high demand in 2017[54]. These shortages are primarily linked to the fact that better abroad construction workers enjoy better working conditions and higher pay. The shortage of construction workers, as well as other skilled manual workers is affected also by a limited amount of young people undertaking VET and as a consequence of emigration of skilled manual workers to countries offering considerably higher salaries[55]. Even though unemployment rate is declining, however falling unemployment is influenced by emigrating labour force. Over the past few years, net migration in Lithuania has been one of the highest in the EU.

In addition to overall bottleneck vacancies, the construction sector is expected to need 35,000 to 40,000 workers to be trained in energy-efficiency of buildings, even though no official data is available on the number of already trained workers. Nevertheless, according to a survey conducted among construction companies, it is reported that about 40% of workers have received training in energy efficient construction of buildings, while 30% have been skilled in renewable energy[56].

Sector & sub-sector specific issues

Material efficiency and waste management

> In 2012 , a total of 564,286 tonnes of construction and demolition (C&D) waste were generated in Lithuania, which represent a 45% increase compared to 2010 figures (388,100 tonnes)[58], particularly related to the increase of construction activities in the country during this period.

Waste management, including C&D waste, is governed by the Law on Waste Management[59], which establishes general requirements for waste prevention, accounting, collection, storage, transportation, utilisation, and disposals of waste. In addition the Law on pollution tax[60] sets out the rules of application of pollution charge in order to encourage pollution reduction and waste management implementation. Furthermore, the **National Waste Management Plan** for the period of 2014-2020 was approved by the government in order to prevent the effects of waste pollution, ensure a waste management framework and to set waste management targets. The management framework should address the issues of the general population, guarantee environmental quality and agree to the standards of market economy, whereas the waste targets are to be increased to a minimum of 50% of recycling target by 2020[61]. Currently there are several construction waste management sites managed by "Ekobazė" that were built in 2015 in the district of Vilnius, in which construction and demolition waste is being transported. A small amount of construction and demolition waste delivered by private individuals are free of charge[62].

Climate and energy

Emissions of greenhouse gases (carbon monoxide and dioxide, methane and nitrous oxides) from activities related to construction and real estate in Lithuania amounted to a total of 154,645.5 and 19,606.6 tonnes, respectively. Emissions in the construction sub-sector have declined by 13.6% during the period 2010-2014[63], whereas those in the real estate sub-sector experienced a 6.3% increase.

5

Innovation in the construction sector

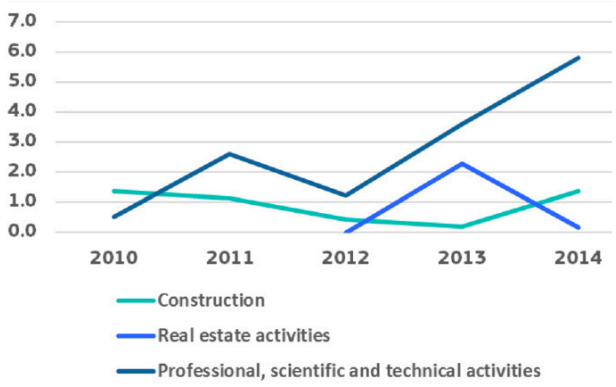
According to the European Innovation Scoreboard 2017, Lithuania is classified as a **Moderate Innovator**, with an overall performance in terms of innovation and R&D below the EU average.

According to the European Innovation Scoreboard 2017, Lithuania is classified as a **Moderate Innovator**, with an overall performance in terms of innovation and R&D below the EU average. Despite some minor fluctuations, the country's overall innovation performance has been improving, with an average annual growth rate of 2.4% during the period 2010-2015, the third largest increase in the EU after Malta (3.6%) and Latvia (4%). Lithuania performs below the EU average for most dimensions including Innovation-friendly environment, Human resources and Linkages. Relative weakness was recorded in Sales impacts, Attractive research systems and Intellectual assets. Lithuania scores above average for R&D expenditures in the public sector and venture capital investments. It also performs well in terms of non-R&D innovation expenditures[64].

Business enterprise R&D expenditure (BERD) in the broad construction sector has shown fluctuations over the past years (Figure 7). For instance, BERD in the construction sub-sector reached EUR 1.4 million in 2010, but subsequently decreased to EUR 0.2 million in 2013. Consequently, in 2014[65] it reached the 2010 level and stood at EUR 1.4 million. Conversely, BERD in professional and scientific activities increased from EUR 0.5 million in 2010 to EUR 5.8 million in 2014, the highest across the sub-sectors. Finally, BERD in real estate activities[66] displayed a significant increase, from EUR 0.8 million in 2010 to EUR 2.3 million in 2013 followed by a rapid drop to EUR 0.2 million in 2014.

Business enterprise R&D expenditure (BERD) in the broad construction sector

Figure 10: Business enterprise R&D expenditure per construction sub-sector in Lithuania over 2010-2014[64] (EUR m)



Source: Eurostat, 2017.

In parallel, the **total R&D personnel** (full-time equivalents – FTE[67]) in the broad construction sector experienced a generally increasing trend between 2010 and 2014[68]. In line with the positive evolution of the BERD, this increase was led by the professional, scientific and technical activities sub-sector, which sharply increased its FTE from 43 in 2010 to 267 in 2014. Total FTE in the construction sub-sector also experienced an increase from 70 in 2010 to 130 in 2015 during the same period and the real estate activities sub-sector reported a slight growth from 6 FTE in 2010 to 10 in 2014[69].

Moreover, there has been an increase in the average number of construction related patent applications in recent years. The only one patent application was registered in 2010, followed by an improvement of 4 patents recorded in 2014, the highest number between 2010 and 2016.

An average number of patents were filed was 1.7 during the same period recording 3 patents in 2016, suggesting an increasing focus on construction innovation and research. Nevertheless, no Lithuanian construction-related firm ranks within the top 1,000 EU companies by R&D (industrial sector ICB-3D), according to the 2016 EU R&D Scoreboard[70].

The Lithuanian government has devoted its efforts to the preparation of national programmes and strategies aiming to promote innovation

across the different sectors of the national economy, namely in terms of renewable resources/energy, waste management, construction and green transport[71]. One of the key initiatives is the **Lithuanian Innovation Development Programme 2014-2020**[72], which aims to promote Lithuania's global competitiveness by establishing an effective innovation system in all sectors. In addition, the **Smart Specialisation Strategy** was launched in 2015. This strategy aims to boost investment in RDI to develop the business potential for excellence, the strengths in research, the technological development and innovation, as well as the capacity to foster the collaboration among public and private stakeholders[73]. One of its main RDI priority areas includes the 'Technology for the Development and Use of Smart Low-Energy Buildings - Digital Construction', for which an Action Plan was approved for the period 2015-2020. The Action Plan details actions to develop and introduce digital construction technologies, BIM models, new products, processes and methods to the construction market[74]. The smart specialisation priorities have been designed by an Independent Expert Group established by the Lithuanian Research and Higher Education Monitoring and Analysis Centre (MOSTA)[75]. The monitoring is conducted through the development of roadmaps, which established the basis and targets for each priority[76].

In this respect, the construction sector is actively involved in the digitalisation of the industry. The public institution **Digital Construction** (Skaitmeninė Statyba) was set up in 2014 by the Lithuanian Association of Builders together with 12 other relevant associations to foster the development of Building Information Modelling (BIM) and introduce the National Construction Classification and Industry Foundation Classes (IFC) in the construction sector in Lithuania[77]. Digital Construction is also focused on improving cost-efficient construction and labour force competencies, which are current priorities in the constructions sector of Lithuania, according to the president Gedvilas of the Lithuanian Builders Association[78].

In addition, the construction company KNAUF organised free of charge seminars in the largest cities in Lithuania with aim to provide construction professionals with the latest improvements of the construction sector and market innovations updates in 2017[79].

6

National & Regional Policy & Regulatory Framework

Policy schemes

The Lithuanian Ministry of Environment is responsible for matters related to construction and housing, with housing policy being defined by the **Lithuanian Housing Strategy** (Lietuvos būsto strategija). The strategy, initially approved by the government in 2004, sets the long-term national policy objectives and priorities for the improvement of housing up until 2020, including the design and implementation of housing development, renovation and modernisation, as well as financial and social support programmes and measures. Namely, the Strategy recognises the need to provide more affordable housing options to middle and low-income households, particularly by strengthening the rental market. Thus, by 2020 the Strategy aims to increase the proportion of rental properties to 18% of the total housing stock, with social housing growing to account for about 4-5% of the stock[80] (i.e. reaching a total of 25,000-30,000 apartments[81]). Moreover, the Strategy aims to increase the annual volume of residential construction, reaching 12,000-15,000 new dwellings by 2020. Ultimately, the Strategy seeks to result in a fourfold increase in the annual investment in new residential construction and renovation/modernisation of the dwelling stock by 2020[82].

In line with the Strategy, the Ministry of Social Security and Labour approved the **Municipal Social Housing Development Action Plan 2015-2020** (Savivaldybių socialinio būsto fondo plėtros 2015–2020 metais veiksmų planas), relying on European Regional Development Fund (ERDF) funding to meet the growing demand for affordable dwellings. In particular, the Action Plan finances projects such as the construction of new social housing buildings, the reconstruction or maintenance of existing ones (both residential dwellings, as well as dormitories, foster homes, shelters, etc.) and the conversion of non-residential buildings into social housing. Moreover, the Plan seeks to encourage energy efficiency by supporting households in buying a social dwelling with a minimum energy class of C. Ultimately, the Action Plan aims to result in 1,150 new social housing units and increase their availability for eligible households. The total budget for the implementation of the Plan amounts to EUR 58.7 million, of which EUR 49.9 million from the ERDF and EUR 8.8 million from municipal budgets[83].

> In order to support low and middle-income families in accessing affordable properties, the government approved the Law on Support for the Acquisition or Rental of Housing (Paramos būstui įsigyti ar išsinuomoti įstatymas), which foresees that households entitled to social housing or renting a dwelling under market conditions become entitled to a compensation of part of rental or lease payments.

Moreover, the state provides selected beneficiaries (e.g. individuals below the age of 35, families with three or more children, individuals with disabilities, etc.) with support to cover up to 20% of the mortgage taken out to purchase a property[84]. In addition, the national government drafted a new law, which come into force in 2018. The aim is to offer financial support to young families (up to the age of 35) who wish to purchase their first home outside main cities, in suburbs and regions. Families, who would take a housing credit up to EUR 87,000, government will provide a 15% subsidy of total cost to cover the initial contribution, which has to be returned within 5 years[85].

Finally, in November 2015, the Ministry of Environment approved the **Lithuanian construction sector development guidelines for the period 2015-2020** (Lietuvos statybų sektoriaus plėtros ir vystymo 2015–2020 metais gaires). The document defines strategic objectives for the sector for 2020, as well as the targets to be achieved, with the aim of addressing the challenges related to qualifications, energy and environmental protection requirements, market access, information technology application and deployment areas. Namely, the guidelines' strategic goals include the improvement of the sustainability of buildings; a more efficient use of resources in the production, transportation and use of construction products; promotion of sustainable cities and infrastructure; and encouraging high-skilled training and continuous professional development[86].

Insurance and liability related regulations

In Lithuania, article 37 (1) of the **Law on Construction** (Statybos įstatymas) stipulates that designers of construction works and building contractors must carry compulsory civil liability insurance. For designers, this mandatory insurance covers damage caused to third parties resulting from faulty design, whereas for building contractors it covers damages inflicted to third parties as a result of defective construction works[87]. The amended version of the Law also extends this obligation to technical supervisors of construction works. The regulatory principles and basic provisions in this regard are contained in the documents Rules of Compulsory Civil Liability Insurance of a Contractor, Rules of Compulsory Civil Liability of a Construction Designer and Regulations on Compulsory Civil Liability Insurance of a Technical Supervisor of Construction Works, which are to be taken into account when drawing up contracts on compulsory civil liability insurance[88]. Voluntary insurance is also available, including professional indemnity insurance for professional consultants and Contractor's All Risk (CAR) insurance covering damage to construction works during the building phase[89].

From January 2018, construction work insurance will replace the compulsory contractor's civil liability insurance. Under this insurance, the insurer indemnifies the damage caused to the builder (customer) and third parties, including damages made to buildings, personal health or damage caused by the outflow of property or damage to third parties caused to the insured person. The insurance or bank guarantee must be given a three-year warranty in case the defect of construction occurred, even if the company declared bankrupt, according to the Ministry of Environment[90].

Liability principles in the construction sector are defined by the **Civil Code**, which stipulates that liability can originate from non-performance of a duty established by law or by a contract (e.g. failing to build the structure within the time specified in the contract or according to the specifications detailed by the client), from prohibited actions or from negligence. In these cases, the contractor may be required to repair the defects or pay the client compensation costs. The duration of liability amounts to 10 years for structural defects and up to 20 years in case of deliberately concealed defects[91].

Building regulations

The **Law on Construction** is the main piece of legislation governing building works in Lithuania. It establishes all the essential requirements for construction works built, reconstructed and repaired within national territory. It includes detailed procedures of research, design, construction, reconstruction, repair, commissioning, usage and demolition of such works, as well as the relationship between the parties involved in the construction activity. It also includes the minimum requirements for energy performance of buildings[92].

In addition, the construction process is also regulated by a variety of **technical construction regulations**, such as classification of buildings (STR 1:01:03:2017), structure design (STR 1:05:06:2010), inspection of the project (STR 1:06:03:2002), building maintenance (STR 1:09:05:2002), project supervision procedure (STR 1:09:04:2007), accident investigation (STR 1.10.01:2002) and completion of construction (STR 1.11.01: 2010), among others[93]. From January 2018 a **new Law on Construction** will enter into force. According to the new provisions, construction or reconstruction of an extraordinary buildings will be allocated 20 working days to be checked after its completion, while for other structures and buildings - 10 working days[94].

7

Current Status & National Strategy to meet Construction 2020 Objectives

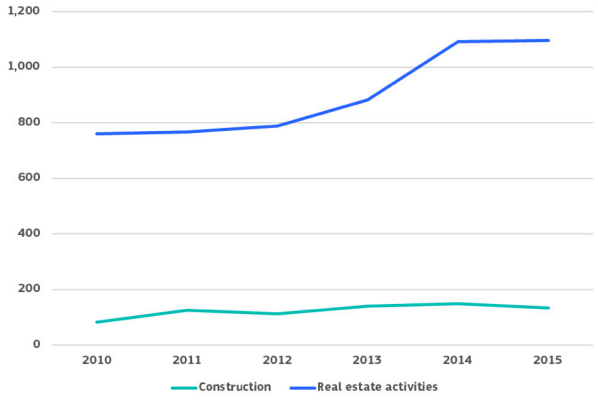
TO 1 - Investment conditions and volumes

Total **investment by the broad construction sector**[95] has recorded an increase over the past years (Figure 8), with investment by narrow construction increasing by 61.0% and by real estate by 44.1%, respectively, over 2010-2015[96]. In absolute terms, investment by real estate activities stood at EUR 1.1 billion in 2015, while investment by the construction sub-sector at EUR 134 million.

Investment by narrow construction evolution 2010-2015 ↑ **61.0%**

Investment by real estate evolution 2010-2015 ↑ **44.1%**

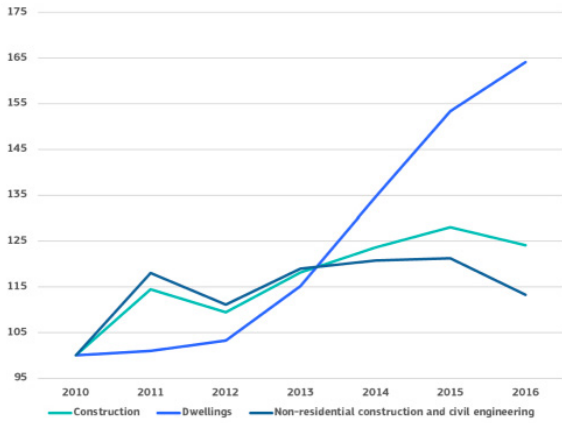
Figure 9: Investment by the Lithuanian broad construction industry between 2010-2015 (EUR m)



Source: Eurostat, 2017.

Investment in construction is the largest driver of investment in the country, particularly for non-residential assets. However, construction investment started shrinking in 2016 mainly due to the slowdown in the implementation of EU funds following the end of the 2007-2013 programming period. Investment in construction is expected to reverse in 2017 as EU fund disbursements are projected to return to the 2015 level[97]. Total investment in the construction[98] sector went up by 24.1% over 2010-2016. Notably, investment in non-residential construction and civil engineering after hard hit at the peak of the global economic crisis, rose up by 13.2% between 2010 and 2016. Investment in dwellings demonstrated the largest growth of 64.1% over the same period of time. Nonetheless, the investment level in construction remains substantially below the pre-crisis level.

Figure 10: Investment in the Lithuanian construction sector between 2010-2016 (2010=100)



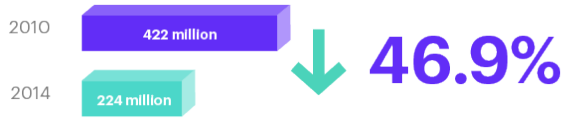
Source: AMECO, 2017.

> Total inland infrastructure investment as a share of GDP increased from 1.1% in 2010 to 1.4% in 2014.

In absolute terms, investment in construction amounted to EUR 3.9 billion in 2014, consisting of EUR 913.3 million in dwellings and EUR 3.0 billion in non-residential and civil engineering[99].

Furthermore, **investment in infrastructure** dropped considerably since 2010. The share of total inland infrastructure investment in the GDP peaked at 1.9% in 2010 but continuously declined to 1.3% to 2014[100]. Investment in road infrastructure experienced significant cuts, dropping from EUR 422 million in 2010 to EUR 224 million in 2014 (-46.9%). In contrast, investment in railroad infrastructure increased considerably from EUR 107.2 million in 2010 to EUR 264 million in 2014. In parallel, **infrastructure maintenance** declined, too, but to a lesser extent. Investment in road maintenance dropped by 10.6% from 160 million in 2010 to 143 million in 2014, while rail maintenance experience a slight increase of 8.6% from EUR 142.8 million in 2010 to EUR 155 million in 2014 over the same period.

Investment in road infrastructure evolution 2010-2014



Household **renovation spending** experienced a significant growth of 98.9% between 2010 and 2014, from EUR 240 million to EUR 477.3 million. Moreover, renovation spending as a share of total household disposable income increased from 1.2% in 2010 to 2.1% in 2015, which is above the EU-28 average of 0.8%.

Household renovation spending evolution 2010-2015 ↑ 98.9%

The transport sector is considered of strategic importance in Lithuania, as it contributes significantly to GDP and the country has the ambition to develop into a hub for transportation from Nordic countries to Central Asia and China. However, the transport infrastructure still needs improvement. For instance, only 6.9% of railroads are electrified and the rail connection from north to south is poorly developed[101].

To overcome some of these challenges and strengthen connectivity, Lithuania is dedicating EUR 1.1 billion of its EU funding over 2014-2020 to develop transport infrastructure[102]. Specifically, Lithuania allocated EUR 177 million of its share of the **Connecting Europe Facility (CEF)** to transport projects[103]. Similarly, under the **"Integrated Development of Big Cities"** project, which is co-funded by the EU and launched for the same period of 2014-2020, the Ministry of the Interior funded another project in Vilnius called **"Management of Public Spaces in the Southern Target Area under the Reconstructed Aukštaičiai, Paupis and Drujos Streets"**. The objective is to improve installation of rainwater drainage and street lighting networks, sidewalks, Turgaus Square, formations of plantations, small architectural elements (bins, benches, etc.). The total amount allocated to the implementation of the project is EUR 1.9 million, in which EUR 1.7 million came from the EU funding[104].

One of the key strategic projects in transport infrastructure is the **Rail Baltica project**, which is part of the **'North Sea-Baltic' international transport corridor (TEN-T)** and will link the Baltic States to the European rail network[105]. This project will be a key contributor to transport infrastructure spending, boosted by EU funding, which will make a positive outlook for Lithuania's transport infrastructure sector over the next decade[106]. In addition to EU funding, the Nordic Investment Bank provided a loan worth EUR 144 million for the construction of the railroad track from the Lithuanian-Polish border to the city of Kaunas[107]. The overall Rail Baltica project is expected to be finalised in the mid-2020s[108].

Furthermore, the **Baltic Energy and Infrastructure Fund (BEIF)**, Lithuania's first energy and infrastructure investment fund, was established in 2016. With declining EU funds, alternative source of investment is needed for infrastructure and energy projects. At the same time, long-term investors are looking for opportunities in these markets. Some of the project that fit in the investment strategy of the fund are the upgrading of the Vilnius-Utena highway, the development of Lithuania's international airports, as well as investments in the port of Klaipeda[109]. The fund has a size of EUR 100 million[110].

Finally, the **European Investment Bank (EIB)** is another important player in supporting Lithuania's infrastructure investment. For instance, it is contributing to the modernisation of the country's railway with a EUR 68 million loan for the extension of the Klaipėda railway hub, as well as renewal and electrification of several railway tracks[111]. The city of Vilnius will further benefit from EIB financing in the form of a EUR 50 million loan facility dedicated to urban infrastructure, such as better roads, the rehabilitation of the city centre as well as renovation of schools and kindergartens[112].

TO 2 – Skills

> Over 2011-2015, the number of students participating in vocational education and training (VET) increased from 20,000 to 23,000 per school year.

However, the proportion of VET students remains comparatively low at 26.8% in 2015 compared to the EU average of 47.3%. The employment rate of VET graduates was 74.9% in 2016, which was almost the same as the EU average of 75.0%[113]. Lithuania faces difficulties in increasing participation in **adult learning**. Adult participation in learning was low in 2016 and stood at 6.0%, which was well below the EU average of 10.8% and the national target of 15.0%. One of the main problem of inactive participation was fragmented system, insufficient involvement of stakeholders in planning and developing adult learning and gaps in legislation[114].

Furthermore, Lithuania is affected by one of the highest skills mismatches in the EU, with medium and low-skilled workers facing high risks of unemployment (13.5% and 29.8%, respectively) while the risk of unemployment of high-skilled workers is very low (4.2% compared to 6.1% in the EU)[115]. The skills mismatch has been exacerbated by the crisis in the construction sector, as a number of jobs were lost and will likely not be generated again[116]. This has led to an increase of the structural unemployment rate, which was estimated to around 10 to 12% in 2014. In addition, the shortage of high-skilled labour force is likely to generate some additional wage pressures too.

Thus, there is a need to improve VET quality, attractiveness and responsiveness to labour market needs. In 2010, the Lithuanian government approved the Lithuanian qualification framework (LQF), setting up clear rules and requirements for getting qualification though different forms of education. The VET qualification acquired outside of the formal education and training is planned to be included in the LQF.

Some progress has also been achieved with the introduction of **2014-2016 Action plan for the development of vocational training**, which introduces modular VET training and strengthens work-based learning[117]. In August 2017 international conference **"Vocational Education and Training: VETriangle"** was organised in Vilnius. One of key objectives was to overview vocational education and training system in Lithuania and introduce Erasmus+ programme, VETriangle project. It also aimed to find ways to attract students to commit vocation education, involve companies and build a quality work-based learning[118].

In order to improve the qualification of Lithuanian construction workers, several initiatives have been launched. Notably, the **Lithuanian construction sector development guidelines for the period 2015-2020** sets the objective of encouraging high-skilled training and continuous professional development, including the promotion of professional qualifications in accordance with market needs, as well as the use of EU programmes such as Build Up and Erasmus+ for developing effective trainings[119].

Furthermore, as a result of the national **Build Up skills project**, an interest group was brought together for building the **National Platform of Qualifications of Construction Sector Workforce**. The goal is to create a strategy to meet EU 2020 targets, including an action plan to identify the quantitative need for skilled workers, their training measures and priorities, as well as the certification procedures[120]. In addition, this platform aims to establish a voluntary system for development and recognition of professional competences and skills of the building workforce in Lithuania in relation to requirements for nearly zero energy buildings[121].

Finally, in 2003 Lithuania introduced a mandatory Employee's Identity Certificate containing basic employment information of construction workers (e.g. company name, employee's name, job title, contract number). Primarily, this tool aims at combating undeclared employment. Nevertheless, discussions are ongoing in the Lithuanian Builders Association about expanding the scheme to include additional personal information, such as education, safety at work, health, trainings and qualifications[122].

TO 3 - Resource efficiency / Sustainable construction

> Lithuania has made good progress with respect to energy efficiency. According to its national energy efficiency target, the country is to reach a 17% reduction in the final energy use by 2020, compared to the 2009 level.

Lithuania has made good progress with respect to energy efficiency. According to its national energy efficiency target, the country is to reach a 17% reduction in the final energy use by 2020, compared to the 2009 level. This entails a decrease of 740 ktoe, implying attaining a level of 6.5 Mtoe of primary and 4.3 Mtoe of final energy consumption by 2020[123]. Lithuania seems to be on the right track in this respect, with final energy consumption having declined by 4.4% over 2010-2014[124]. Moreover, the country is performing particularly well with regard to energy efficiency in buildings, as supported by national funding schemes and EU funds.

> The main financing scheme for the renovation of residential buildings is the Programme for the Renovation (Modernisation) of Multi-apartment Houses (Daugiabučių namų atnaujinimo (modernizavimo) programa), aiming to encourage the energy efficient renovation of apartment blocks built before 1993 and boost the construction sector[125].

The programme was initially enforced in 2005, offering state grants of up to 50% of the costs of the renovation works, with the balance provided by commercial banking loans[126].

Nevertheless, it ran out of funds by 2007 due to limited state resources, and the European Commission, EIB and the government therefore signed an agreement in 2009 to relaunch it using JESSICA[127]. The **JESSICA Holding Fund** was thus set up and capitalised with an initial investment of EUR 227 million, of which EUR 127 million from the ERDF and EUR 100 million from the national budget. The programme offered loans amounting to up to EUR 200,000 per building, repayable over 20 years at a fixed interest rate of 3% per annum. A 50% grant to prepare the relevant renovation documentation was also available, as well as a 100% subsidy on all expenses for low-income applicants[128]. Moreover, beneficiaries could claim a 15% loan rebate from the Holding Fund if the renovated building achieved the minimum energy efficiency class D (i.e. a 20% reduction in energy costs) and an additional 15% grant from the Climate Change Programme in case of a 40% reduction in energy costs[129]. Eligible costs under the programme include the replacement of windows, doors and heating/cooling equipment, as well as the insulation of walls, ceilings and roofs.

The renovation of multi apartment buildings was funded through the JESSICA initiative until 2013. For the period 2014-2020, it falls under the remit of the newly established **Multi-apartment building modernisation fund (DNMF)**, which provides soft loans through its EUR 74 million allocation[130]. In 2015, 767 multi-apartment houses were renovated (almost a fourfold increase since 2014), and works are underway in an additional 969 blocks, for a total investment of EUR 304 million[131]. According to the EIB[132], a total investment of over EUR 1 billion will be required by 2020 within the framework of the **Lithuanian apartment building renovation programme to complete its objectives**[133].

In addition, to further comply with the European Energy Efficiency Directive 2012/27/EU, the government approved the **Public Buildings Energy Efficiency Programme** (Viešųjų pastatų energinio efektyvumo didinimo programa) in 2014. The programme aims to renovate a total area of 700,000 m2 of public buildings in order to achieve 60

GWh worth of savings in final energy consumption[134]. To this end, the **Energy Efficiency Fund (ENEF)** was set up in 2015, funded by the ERDF with funds amounting to EUR 79.6 million. The Fund will implement two financial products, namely loans for financing the renovation of central government buildings, which will benefit from up to EUR 65.1 million, and guarantees of up to 80% on loans granted by commercial banks for street lighting modernisation projects[135] (up to EUR 14.5 million for the upgrade/replacement of up to 100,000 units[136]). The guarantees cover all costs related to the interventions to modernise the street lighting system of Lithuanian cities, including replacement of lights, upgrade and/or installation of smart management and control systems, etc.[137]

Finally, in line with the targets of the **Europe 2020 Strategy** to increase the use of renewables and energy efficiency and to reduce greenhouse gas emissions, EUR 971 million of EU Structural and Investment Funds (ESIF) were allocated for 2014-2020 to priority axis 4 **'Promoting Energy Efficiency and Production and Use of Renewable Energy'**[138]. In addition, from 2018 a law will come into force in Lithuania requiring all new buildings to be built as A+ class, and from 2021 the highest - A++ class. Such buildings are called energy-free, because they will have to produce half of their energy consumption from renewable energy sources (solar, wind, geothermal, etc.). in Lithuania[139]. Last but not least, The Ministry of Energy submitted to the cabinet of Lithuania an updated draft of **National Energy Independence Strategy** in October 2017. Lithuania will go towards the direction of renewable energy development focusing more on local production rather than energy imports, while ensuring competitive energy prices. The strategy concentrates on four main energy policies of Lithuania such as energy security, competitiveness, development of green energy and innovations. By 2025 Lithuania is also planning to implement the synchronization of electricity networks with continental European networks as well as to build Lithuanian-Polish Gas Interconnection (GIPL) project[140].

TO 4 - Single Market

> Lithuania performs well with respect to the metrics of the EU Single Market Scoreboard, with Infringements, Internal Market Information System and Trade integration in the Single Market for goods and services reporting positive scores above the EU average.

Its performance in Public Procurement was satisfactory in 2016, with average performance in the one-bidder indicator (i.e. the proportion of contracts awarded where there was just one bidder), however an unsatisfactory score for aggregation (i.e. the proportion of procurement procedures with more than one public buyer) and award criteria (i.e. the proportion of procedures awarded only on the basis of lowest price) indicators[141].

Public procurement is susceptible to corruption, bribery and lack of transparency, with public funds often being diverted to preferred companies and politically connected bidders being favoured during the award process. In fact, 39% of Lithuanian business managers cited corruption as the main reason preventing them from winning a public tender, above the EU average of 34%[142]. This risk is particularly high in construction and land administration, with about a third of businesses claiming they were expected to bribe officials in order to obtain a construction permit[143]. The most widespread issues in the sector include favouritism, lack of transparency when dealing with EU funds and single bidders. In 2014, about 47% of the total value of construction procurement contracts (EUR 1.3 billion) was won by the same 20 favoured companies[144]. Overall, corruption damage can reach 11.4% of GDP or 4.44 billion in Lithuania in 2017, in which construction having the highest share of shadow activity and leading to resource misallocation according to the study published by RAND Europe[145].

In terms of **cross-border provision of construction services**, Lithuania is regarded to impose some excessive and unjustified requirements on cross-border providers. The European Commission issued a letter of formal notice to Lithuania requesting it to remove its multidisciplinary restrictions on certain construction service providers, which hampers the provision of services across the Single Market[146].

The professions of architects and civil engineers are regulated in Lithuania. With regard to the former, an attestation issued by the Chamber of Architects is required for activities on structures of exceptional significance, namely reserved activities related to the design of the architectural parts and management of construction projects[147]. Similarly, civil engineers need a specific authorisation to carry out activities related to the structural part of the building design documentation[148]. The main reasons given for regulating the professions are linked to ensuring the protection of consumers and recipients of services, as well as the preservation of the natural and urban environment. Lithuania is currently revising the use of the qualification certificate required for architects and civil engineers for constructions of exceptional significance[149].

Finally, with regard to the implementation of **Eurocodes**, all Eurocode Parts are published as National Standards and translated in Lithuanian. Moreover, National Annexes are published on 58 Eurocode Parts, except for EN 1997-2, with most of them being available in English (with the exception of EN 1990-A1, EN 1991-1-3, EN 1991-1- 4, EN 1991-1-7, EN 1991-2, EN 1992-1-1, EN 1997-1). The use of Eurocodes is voluntary in Lithuania, and national regulations can be used in parallel for structural design. Their use in Public Procurement is prescribed by the Law on Public Procurement (Valstybės žinios)[150].

TO 5 - International competitiveness

Lithuania ranks 41st out of 137 economies in the 2017-2018 Global Competitiveness Index[151].

Lithuania ranks 41st out of 137 economies in the 2017-2018 **Global Competitiveness Index**[152]. The performance deteriorated since last year and scored below the EU average in terms of internationalisation of its SMEs, with the time, cost and number of documents required to export and import being generally worse than the EU average. Namely, the cost of exporting for documentary compliance was estimated at USD 28 (EUR 23.49) in 2016, compared to the EU average of USD 16.43 (EUR 13.78), taking 3 hours (against the EU average of 1.39)[153]. On the contrary, the cost of importing for documentary compliance was slightly above the EU average, free of charge compared to the EU average of USD 6.61 (EUR 5.55) and took 1 hour against the EU average of 1.07.

Lithuanian construction companies have been increasingly expanding to foreign markets over the last years, in order to diversify risks and due to the currently insufficient demand on the local market. Revenues from contracts abroad have been growing, with EUR 140 million being generated in 2014 alone, a record high for the Lithuanian construction industry[154]. Moreover, in the first half of 2016, the value of construction works performed overseas increased by 26.1%[155].

The internationalisation of Lithuanian SMEs is being promoted through several initiatives. The **New Opportunities LT** (Naujos galimybės LT) instrument provides subsidies to organisations such as business associations, Chambers of Commerce and cluster coordinators to participate in international exhibitions, fairs and trade missions abroad. With a budget of around EUR 30 million, the scheme covers up to 50% of eligible costs, up to a maximum of EUR 500,000[156]. The measure supports a variety of projects across different sectors, such as ICT, textiles, food and construction. For instance, EUR 433,560 has been allocated to the Confederation of Lithuanian Industrialists (Lietuvos pramonininkų konfederacijos - LPK) for the project 'Promotion of the internationalisation of the Lithuanian construction, food technology and environmental sectors'. Under the project, SMEs active in these fields will be supported in expanding their existing markets and exploring new ones. The project allows 13 companies to present 31 products in international exhibitions on construction, food technology and environment, held across countries such as Finland, Norway, Lithuania, Latvia, Estonia, Poland and Belarus. Furthermore, EUR 392,950 has been granted to the LPK for the project 'Lithuanian construction and landscaping sector abroad', under which 6 companies and their 24 products will be presented in construction and landscaping international exhibitions in Lithuania, Poland, Belarus, Latvia, Russia, Ukraine, Germany[157].

The **Expo Certificate LT** (Expo Sertifikatas LT) was introduced in 2015 to support certifications for exported goods and services. Through a budget of approximately EUR 1.5 million for the period 2014-2020, the facility offers subsidies to cover up to 50% of costs related to the certification and transportation of Lithuanian products and services intended for export. The facility will support a variety of products from different sectors, including construction products, healthcare, food and ICT, which will be exported to markets such as USA, Japan, China, Indonesia, Malaysia, South Korea, Thailand, the Commonwealth of Independent States (CIS) countries (e.g. Russia, Armenia, Azerbaijan, Kazakhstan)[158].

Last but not least, the initiative **"Business Gateway"** (Verslo Vartai) is a virtual portal and one-stop-shop which aims to help new businesses to launch and operate in Lithuania. This portal provides all sort of support for doing business along a company's life cycle, from best tips on how to formulate a new business idea, to how to establish, run, develop and maintain a business and export. This initiative won the Award in the e-Government & Open Data at the World Summit Global Congress in Singapore in 2016[159].

8
Outlook

The Lithuanian economy has been recovering since 2010, exceeding the 2008 pre-crisis level in 2016.

The residential market seems to have overcome its 2010 bottom low, with house prices starting to pick up again particularly in the largest cities as demand started strongly rising.

The Lithuanian economy has been recovering since 2010, exceeding the 2008 pre-crisis level in 2016. This positive evolution is expected to continue over the coming years, with the economic outlook for the country being favourable. **GDP** is forecast to grow by 5.2% in 2017 and by 8.5% in 2018, compared to 2015, reaching EUR 36.5 billion. As for the **construction sector**, mild growth is predicted for the coming years, although it will slow down considerably up until 2020 due to the limited opportunities on the domestic market. Indeed, it is projected at 6.5% in 2017 and at 4.1% in 2018, further falling to 3.5% in 2019 and 3.4% in 2020[160].

GDP evolution forecast 2015-2018 ↑ 8.5%

The **number of workers** in the broad construction sector has been experiencing a revival since 2011, and this trend is also predicted to continue in the future. A number of workers is projected to increase by 0.6% in 2017 and by 3.8% in 2018 relative to 2015, reaching 172,026 people, although it will still be below the 2008 value. Similarly, the **number of enterprises** in the broad construction sector is forecast to grow by 1.7% in 2017 and by 5.2% in 2018 relative to 2015, reaching 48,175 and exceeding the 2008 pre-crisis level by 3.8%.

The **value added** of the broad construction sector is also expected to experience a substantial growth, being projected to rise to EUR 2.6 billion in 2018, i.e. a 3.9% increase compared to 2015, but still 11.7% below the 2008 value. These improvements will be accompanied by a forecast 0.2% increase in **turnover** in 2017 and by a 3.0% growth in 2018, compared to 2015, reaching EUR 7.6 billion.

Number of workers in the broad construction sector evolution forecast 2015-2018 ↑ 3.8%

The main reasons were increasing market activity and growing income of the population, particularly low loan interest rates and continuing interest in housing as an investment[161]. Nevertheless, **residential construction** is the only segment that is positively contributing to the economic activity of the Lithuanian construction sector[162]. Due to the slowing down of demand, also linked to the already high rate of home ownership, the residential construction segment is forecast to experience an average annual growth rate of 5.8% over the next decade until 2025[163].

The **civil engineering and non-residential construction segments** are particularly dependent on public investments, mostly supported by EU funds. As funds from the previous (2007–2013) EU financing period ended and the implementation of projects financed through the current one (2014–2020) has not yet gathered momentum, the flow of EU funds to Lithuania has declined, therefore providing fewer opportunities for civil and non-residential construction. This decrease resulted in a 13.4% decrease of the value added of the construction sector, mainly driven by the drop of engineering structure construction works (-25.6%), and non-residential building construction activities (-15%)[164]. However, this situation is expected to improve in the near future, particularly due to the expected increase in the use of EU funds[165].

Nevertheless, EU funds are predicted to start being used more extensively as of 2017, thus supporting the recovery in investment and construction activities[166]. Within the civil infrastructure segment, transport infrastructure will acquire increasing dominance, owing to a forecast annual average growth of 4.0% in the period 2016-2025. Its share in the total infrastructure industry is therefore predicted to increase from 55.1% in 2017 (EUR 510 million) to 58.1% by 2025[167].

In conclusion, the growth potential of the Lithuanian construction sector is expected to be limited over the coming years, at an annual average of 2.6% between 2017 and 2025.

In conclusion, the growth potential of the Lithuanian construction sector is expected to be limited over the coming years, at an annual average of 2.6% between 2017 and 2025. According to the Association of Lithuanian Builders, for the last few years the government of Lithuania reduces investment in construction and this negatively affects the overall construction sector, including labour market[168]. Nonetheless, Lithuania is set to remain the largest market in the Baltic States (Lithuania, Latvia and Estonia)[169]. The expansion of the construction sector in the medium term will be supported primarily by transport infrastructure, with housing renovation and non-residential construction (namely the development of hotel and business centres) also playing an important role[170].

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