European Commission

European Construction Sector Observatory

Country profile Estonia

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In a nutshell

The Estonian construction sector suffered from the boom and bust cycle linked to the global economic crisis and gradually recovering since. Production in construction experienced a 43.9% increase between 2010 and 2016. The total turnover of the broad construction sector amounted to EUR 7.8 billion in 2016, having gradually recovered from a sharp decline over 2008-2009 (-31.9%). In parallel, construction costs have gone up steadily by 14% in 2016 compared to 2010. The housing market mirrored positive developments in the overall economy, marking strong overall growth rates and showing recovery of residential construction activity after crisis. In particular, new dwelling completion went up by 103.6%, compared to 2010, recording 4,732 new building completion in 2016.

↑ **43.9%**

Production in the construction of buildings increase between 2010 and 2016

The Estonian housing stock is characterised by apartment blocks with very low energy efficiency, requiring substantial investment in renovation. A number of schemes are available to renovate and reconstruct apartment buildings, e.g. the Apartment Building Loan Guarantee (Korterelamulaenu käendus) and the Reconstruction Grant (Rekonstrueerimise toetus), spurring household renovation spending, which increased by 9.5% over 2008-2015, from EUR 21.1 million to EUR 23.1 million.

Total investment in construction increased by 10% over 2010-2016, however after reaching its peak in 2012 experienced a downward trend. Investment in non-residential construction and civil engineering experienced a similar trend, rapidly growing up until 2012, sharply declined and remained below the 2010 levels. In contrast, investment in dwellings rapidly increased by 116.1% over 2010-2016.

↑ **10%**

Total Investment in construction increase 2010-2016

↑ **116.1%**

Investment in dwellings increase 2010-2016

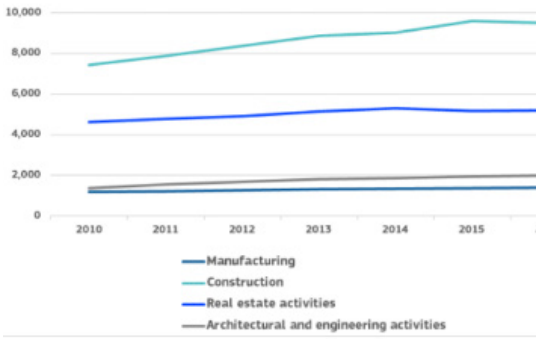
The civil engineering segment will benefit from investment in transport, needed to implement the vision of the National Spatial Plan Estonia 2030+. However, Estonia's transport investment is heavily reliant on EU funds, with a planned allocation of EUR 524.8 million of EU funding dedicated to transport over the 2014-2020 programming period. The Rail Baltic project worth EUR 1.3 billion plays a strategic role to connect Estonia with Central and Western Europe through a high-speed rail connection.

In conclusion, the Estonian construction sector appears to have overcome the effects of the crisis, having set out on a path to recovery, in line with the strengthening of the general economy. Yet, pessimism as to the outlook of the sector is still widespread, with 20% of Estonian construction SMEs expressing concern for the future, however after several years of decline, the national construction sector is predicted to grow at 4.6% in 2017 and 4.5% in 2018.

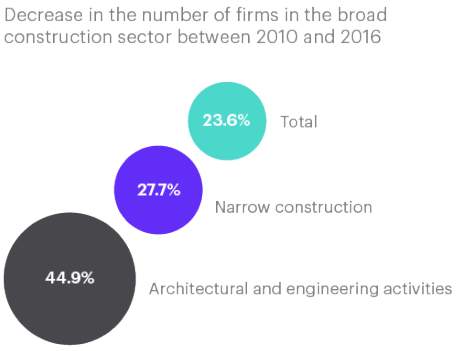
1
Key Figures

The number of **enterprises** in the broad construction sector in Estonia totalled 18,085 in 2016[1] (Figure 1), with the construction sub-sector (NACE F) accounting for 52.6% of the total firms, and the real estate activities for 28.8%. Overall, the number of enterprises in the broad construction sector increased by 23.6% during the period 2010-2016, mostly driven by the 44.9% growth in architectural and engineering activities, followed by 27.7% in the narrow construction and 17.2% in manufacturing.

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

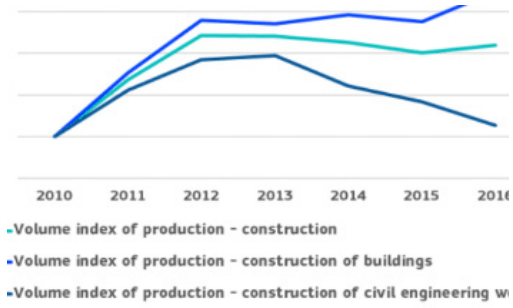


Source: Eurostat, 2017.



Production in construction of buildings experienced a 69.6% increase between 2010 and 2016, followed by a 43.9% increment in construction over the same period of time. Similarly, production in civil engineering rose up by 39% in 2013, which was the highest since 2010, however it dropped by 24% in 2016 keeping a 5.6% increase since 2010 (Figure 2).

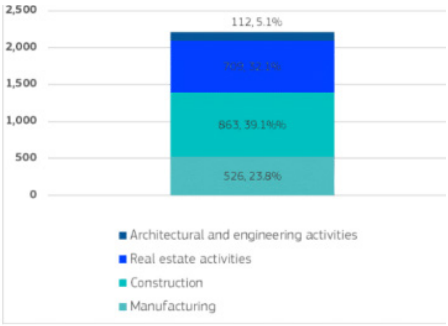
Figure 2: Volume index of production in the Estonian construction sector over 2010-2016 (2010=100)



Source: Eurostat, 2017.

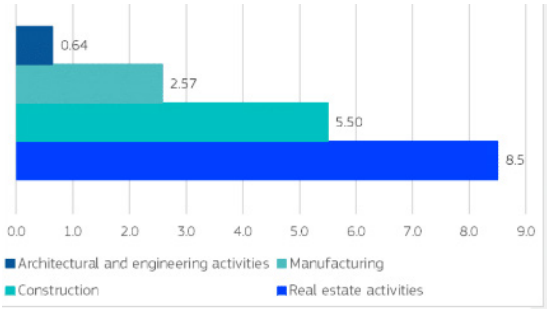
The **total added value** of the broad construction sector amounted to EUR 2.2 billion in 2016[2], with the construction sub-sector contributing to 39.1% of the total[3] (EUR 863 million), followed by real estate activities (32.1% of the total), manufacturing (23.8%), and architectural and engineering activities (5.1%) (Figure 3). The share of gross value added of the broad construction sector in the GDP reached 17.2% in 2014, with real estate activities having the largest contribution (8.5%) (Figure 4).

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



Source: Eurostat, 2017.

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



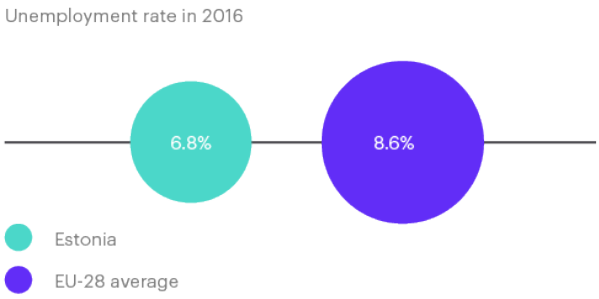
Source: Eurostat, 2017.

2
Macroeconomic Indicators

Despite a decline in 2009 as a result of the crisis, Estonia's economy has been growing ever since. Its **GDP** reached EUR 17.7 billion in 2016. This represents a slight increase compared to the previous year (+1.6%) and 20.6% higher than 2010. The **potential GDP** in 2016 was EUR 17.7 billion, resulting in a slightly positive output gap of 0.29%, signalling a productive utilisation of resources.

Despite a decline in 2009 as a result of the crisis, Estonia's economy has been growing ever since. Its GDP reached EUR 17.7 billion in 2016. This represents a slight increase compared to the previous year (+1.6%) and 20.6% higher than 2010. The potential GDP in 2016 was EUR 17.7 billion, resulting in a slightly positive output gap of 0.29%, signalling a productive utilisation of resources. The **inflation rate** has been volatile over the course of the decade characterised by a peak in 2008 at 10.6% and a subsequent drop to 2.7% in 2010 as a market reaction to the crisis. Since 2011, inflation has been continuously increasing reaching 0.8% in 2016 and projected to go up by 3% in 2018 as a result of increasing global energy prices, salary growth and a significant rise in excise tax rates.

In 2016, the average **unemployment rate** in Estonia stood at 6.8%, 1.8% points below the EU-28 average of 8.6%[5]. Unemployment decreased continuously since the height of the crisis in 2010 when it reached 16.7%. Youth unemployment (below 25 years) amounted to 13.4% in 2016, which is higher than the national average, but well below the peak of 2010 (32.9%), and over 5 points below the EU average of 18.7%.



In terms of demographics, the **total population** of Estonia amounted to 1,315,944 in 2016 and is projected to decrease by 0.74% by 2030 and by 4.5% until 2050, reaching 1,256,975 inhabitants. With the exception of 2015, **net migration** has been negative over the past decade, further contributing to the decrease in population. Notably, on average, over 2,007 people left the country over 2010-2015. Estonia's **working age population** made up 64.9% of total Estonian population, close to the EU average of 65.3%. By 2050, the share of working age population is expected to decrease to 57%. In parallel, the proportion of people over 65 years old will increase from 19% to 27.8% of the total, underscoring the challenges ahead linked to the country's ageing population, notably ensuring active and productive ageing[6].

Estonia's fiscal situation is very sound and the country has a track record of fiscal prudence. In 2016, the general **government expenditure** represented 40.4% of GDP, below the EU-28 average, situated at 46.6%. In addition, Estonia recorded the government surplus of +0.3% of GDP, well below the -3% threshold of the EU's Stability and Growth Pact (SGP). Public debt levels are very low by international comparison. The Estonian **general government gross debt** amounted to 9.5% of GDP in 2016, keeping below 10%, which have been recorded in previous years: 10.2% in 2013, 10.7% in 2014 and 10.1 in 2015. In contrast, the average gross government debt in the EU28 stood at 83.5% of GDP.

> In terms of financial market development, Estonia ranks 22nd out of 137 according to the 2017-2018 Global Competitiveness Report of the World Economic Forum.

It performs particularly strongly with respect to affordability of financial services (22nd), however shows weaknesses in terms of financing through equity markets (36th)[7]. Credit availability in Estonia suffered particularly in the wake of the global economic crisis, as banks became more risk averse with the contraction of the economy. However, the **outstanding loans to non-financial corporations** in the general economy have increased by 15% from EUR 6.46 billion in 2010 to EUR 7.39 billion in 2016. While access to finance for SMEs has improved since the height of the economic crisis, it remains vitally important for the development of the economy, given that 90.6% of Estonian companies employ fewer than 10 employees. SMEs rely mostly on banks, particularly local ones, for their financing needs, as they lack access to diversified sources of financing such as bonds or share issuance. In addition, in 2016 the Estonian government together with the European Investment Fund created "**EstFund**" valued at EUR 60 million in order to increase venture capital investments mainly focusing on Estonian SMEs[8] which show that enterprise Estonia plays important role in facilitating access to finance for SMEs and start-ups in the country.

> In terms of entrepreneurship, Estonia ranked 14th in 2017 out of 190 in terms of starting a business according to the World Bank Doing Business[9].

With respect to the previous years, Estonia's performance deteriorated by 3 positions. Nevertheless, it still scores better than OECD high income countries on most dimensions linked to **starting a business** higher than neighbouring countries, including Norway, Latvia, Denmark, Finland and Lithuania. Notably, 3 procedures and 3.5 days are required for registering a firm. Tax rates and inadequately educated workforce are seen as the most problematic factors for doing business in Estonia[10]. Nevertheless, the latest developments, which made starting a business much easier in Estonia, was an introduction of the 2015 reform, that allows minimum capital to be deposited at the time of company registration. According to the SBA Fact Sheet 2016, Estonia ranks among the best in the EU in terms of its SME-friendly policy and entrepreneurship[11]. The country shows high levels of early stage entrepreneurial activity, high levels of opportunity driven entrepreneurship, as well as an education system focused on entrepreneurship. In addition, Estonia boasts the highest rate of women entrepreneurship (6.8% between 2009 and 2013)[12]. Importantly, SMEs are particularly relevant for the Estonian economy, as they account for 75.8% of value added and 78.5% of employment[13], well above the average in the EU at 66.8% and 57.4%, respectively[14].

3

Key economic drivers of the construction sector

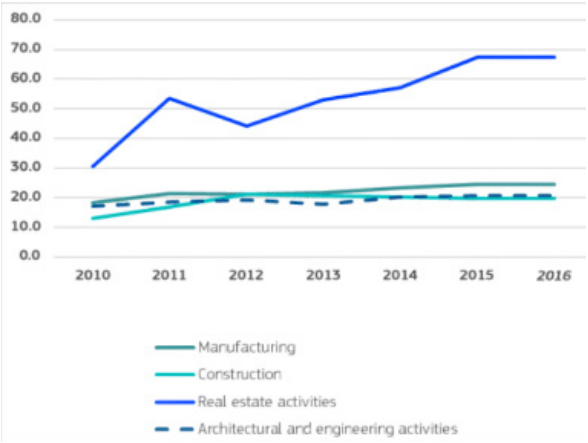
Productivity

Labour productivity in the broad construction sector has generally experienced an increasing trend since 2010, primarily due to improvements in the real estate sub-sector. Labour productivity increased by 50.3% between 2010 and 2014, from EUR 17,200 to EUR 25,900 (Figure 7). Real estate productivity doubled over 2010-2016[15], from EUR 30,600 to EUR 67,500, the highest among all sub-sectors. This was followed by a 50.3% increment in productivity in the construction sub-sector (from EUR 13,100 to EUR 19,700) and a 33.6% growth in manufacturing (from EUR 18,300 to EUR 24,400) over the same period. Productivity in architectural and engineering activities increased less markedly by 21.8% from EUR 17,000 to EUR 20,700 over 2010-2016.

↑ **50.3%**

Labour productivity in the broad construction sector between 2010 and 2014

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



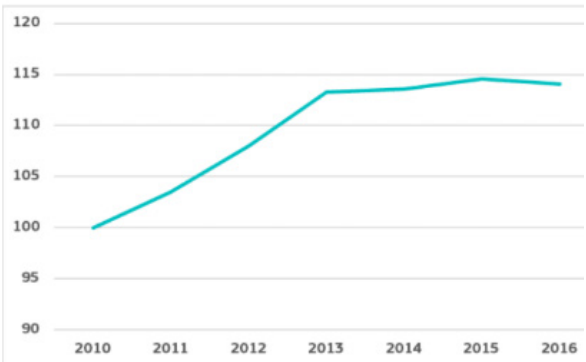
Source: Eurostat, 2017.

Profitability

The total **turnover** of the broad construction sector amounted to EUR 7.8 billion in 2016[16], having gradually recovered from a sharp decline over 2008-2009 (-31.9%). The turnover experienced a 71.1% increase compared to 2010 (EUR 4.6 billion) but a 0.5% decline to 2015 (EUR 7.9 billion). The construction sub-sector registered the largest share of turnover within the sector, accounting for 50.4%, followed by manufacturing (27.5%), real estate activities (19.0%), and architectural and engineering activities (3.2%).

The **gross operating surplus** of the broad construction sector amounted to slightly over EUR 957 million in 2014, 105.2% above the levels registered in 2010 (EUR 466.6 million). In line with the increase in gross operating surplus, the gross operating rate of the broad construction sector[17], which gives an indication of the sector's profitability, stood at 13.0%, 2.8 points above the rate registered in 2010 (10.2%) and 4.9 points below the EU-28 average of 17.9% in 2014. In parallel, construction costs have gone up steadily by 14% from 100 in 2010 to 114 in 2016. The highest point since 2010 was 115 recorded in 2015 (Figure 6). The rise in construction costs was driven primarily by an increment in labour costs, while the price of materials remained more stable.

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



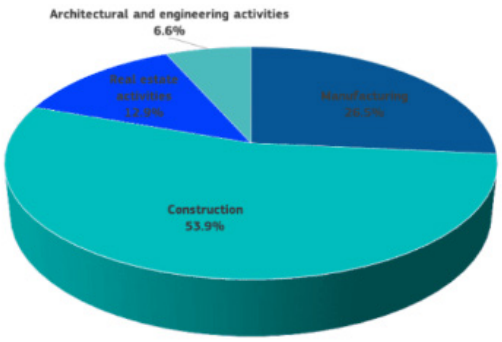
Source: Eurostat, 2017.

Employment

In terms of **employment**, the broad construction sector employed 81,210 people in 2016[18], a 13.9% increase compared to 2010 figures.

The construction sub-sector employed 53.9% of the total workforce in 2016 (43,797 people), followed by manufacturing (26.5%), real estate activities (12.9%), and architectural and engineering activities (6.6%), as represented in Figure 7 below. All sub-sectors, except for real estate activities, which dropped by 1.9%, experienced an increment in the numbers of workers employed with most pronounced in the manufacturing sub-sector, from 17,038 workers in 2010 to 21,528 in 2016 (+26.5%).

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



Source: Eurostat, 2017.

As regarding to **employment by the specific professions**, the manufacturing sub-sector experience a slight decrease in managers (-11.7%) and elementary occupations (-8.7%) in 2010-2016. Contrary the demand in workforce has increased for professionals (+66.7%), clerical support workers (+48.6%) and craft and related trades workers (+27.7%). The structure of employment in narrow construction sector shows decreasing demand for craft and related trades workers (-27.8%) and plant and machine operators and assemblers (-8.7%) and increasing employment for technicians and associate professionals (+85.7%).

The number of **self-employed workers** in the construction sub-sector has been fluctuating since 2010, reaching the peak of 10,100 in 2016, which is a 74.1% above 2010 levels. Self-employment in real estate increased from 1,800 in 2010 to 2,200 in 2016 (+22.2%). Self-employed people in narrow construction represent 17.4% of total self-employed people for the construction sub-sector and 3.8% for the real estate sub-sector. Finally, SME employed 66.1% of the entire workforce of the broad construction sector in 2014, 16.6 percentage points lower than in 2010.

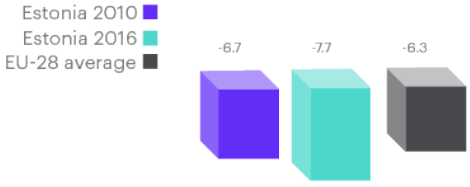
↑ **74.1%**

Increase of self-employed workers in the construction sub-sector 2010-2016

Business confidence

Business confidence has been in negative territory for most part of the indicators since 2010. **Consumer confidence** stood at -6.7 in 2010 and further deteriorated in 2016 reaching -7.7 in 2016, which was lower than the EU-28 average of -6.3. **Industry confidence** fared better starting at 0.5 in 2010, but dropping to -2.7 in 2015 and slightly climbing up to 1.4 in 2016, securing its position above the EU-28 average of -2.5. In contrast, **confidence in the construction industry** experienced the greatest fluctuations over the same period of time. From a low start of -26.3 in 2010, it swiftly recovered over 2011-2012 reaching +3.6 and +3.8 respectively, fared well above the EU-average of -13.9. However, it re-entered negative territory over the period of 2013-2015 with average of -16.7 but recovered in 2016 reaching +0.6. The investment ratio reflects an upward movement from 2010 to 2014 from 21.2% to 28.7% with a declining trend in 2014 from 24.5% to 22.4% in 2016. Investment per worker went up by 69.3% from EUR 15,300 in 2010 to the highest point of EUR 25,900 in 2014.

Consumer confidence indicator in 2016



Domestic sales

The ranking of the **most domestically sold construction products** in Estonia remained relatively constant since 2010. These represented 53% of total domestic construction product sales in 2015[20]. The top 5 most domestically sold construction products are presented in Table 1, including a comparison with the most sold in the EU-28.

Estonia			EU-28
Product	Value (EUR m)	Share in construction product domestic sales (%)	Product
Builders' joinery and carpentry, of woods etc. (group 162319)	95.1	13.4	Other structures (group 251123)
Other structures and parts of structures (group 251123)	87.2	12.3	Doors, windows, etc. (group 251210)
Windows, French windows, etc. (group 162311)	75.8	10.7	Ready-mixed concrete (group 236310)
Prefabricated structural components (group 236112)	66.2	9.3	Prefabricated buildings of metal (group 251110)
Doors, windows and their frames (group 251210)	49.5	7.0	Prefabricated structural components for building or civil engineering, etc. (group 236112)

Source: PRODCOM, 2017.

Export of construction-related products and services

The ranking of the most exported products remained relatively stable since 2010, with the exception of "Veneer sheets and sheets for plywood," which entered **top 5 most exported construction products** replacing "Other plywood, veneered panels and similar laminated wood". The top 5 most exported construction products from Estonia and the EU-28 are summarised in Table 2. Together, these made up 72.1% of all construction products exports in 2015.

Estonia			EU-28
Product	Value (EUR m)	Share in construction product domestic sales (%)	Product
Prefabricated wooden buildings (group 162320)	288.5	32.9	Ceramic tiles and flags (group 233110)
Windows, French windows and their frames, etc. (group 162311)	139.2	15.9	Other structures (group 251123)
Builders' joinery and carpentry, of woods etc. (group 162319)	96.3	11.0	Fibreboard of wood or other ligneous materials (group 162114)
Other structures and parts of structures, etc. (group 251123)	67.1	7.7	Marble, travertine, etc. (group 237011)
Vaneer sheets, sheets for plywood, etc. (group 162121)	41.1	4.7	Doors, windows, etc. (group 251210)

Source: PRODCOM, 2017.

In terms of cross-border provision of construction services, Estonia exported EUR 358 million worldwide in 2016, a high increase of 122.4% compared to 2010, when the exports of cross-border construction services stood at EUR 161 million.

In terms of cross-border provision of construction services, Estonia exported EUR 358 million worlwide in 2016, a high increase of 122.4% compared to 2010, when the exports of cross-border construction services stood at EUR 161 million. In parallel, Estonia imported EUR 114 million worth of construction services, thus generating a **trade surplus** of 244 million. Specifically, in the same year, 70% of exports (EUR 250.7 million) were made to the EU-28 countries, compared to 83% (EUR 135.4 million) in 2010. Similarly, Estonia imported a total of EUR 46.5 million in construction services from the EU-28 in 2016, a 36.7% decrease since 2010 (EUR 73.5 million), while imports from the countries outside the EU-28 were EUR 68 million, a 750% increase since 2010 and EUR 21 million higher than the import from the EU-28. As

for the **cross-border provision of architectural services**, Estonia exported EUR 14 million worldwide in 2015[21], EUR 10 million to the EU-28 and EUR 4 million to countries outside the EU-28. Similarly, in the same year, Estonia imported EUR 10 million from the EU-28 and EUR 1 million from non-EU countries, achieving, achieving a **trade surplus** of EUR 3 million.

Access to finance in the construction sector

In the aftermath of the crisis, **lending** to the construction industry decreased, being 10.2% lower in 2015 compared to 2010, supported by low confidence in the construction sector, as described above. The total liabilities of construction firms amounted to EUR 1.2 billion in 2015, highlighting the reduced access to finance to the construction sector since the economic crisis.

The European Investment Fund (EIF) supports SMEs, and the construction sector, through its activities. Specifically, it provides EUR 20 million in funding to the **BaltCap Private Equity Fund I**, a venture capital investment fund in the Baltics, which focuses, among others, on investing in the construction sector equities[22]. In addition, **EstFund** is another EUR 60 million fund-of-funds initiative launched by EIF in close co-cooperation with KredEx and the Estonian Ministry of Economic Affairs and Communications in 2016[23]. Its purpose is to promote equity investments into Estonian innovative and high growth-centered enterprises. EstFund is forecast to make around EUR 100 million of equity financing accessible for enterprises in Estonia over the coming years and will be additional to the already existing Baltic Innovation Fund that concentrates on investments into later stage firms in the Baltic region[24].

Access to housing

The **housing market** in Estonia mirrored developments in the overall economy, showing recovery of residential construction activity after crisis. **New dwelling completion** went up by 103.6%, compared to 2010 (2,324) and 19.2% to 2015 (3,969), recording 4,732 new building completion in 2016. Likewise, 6,021 **building permits** were granted in 2016, which represent an increment of +133.3% and +7.7% compared to 2010 and 2015, respectively. The Estonian housing market recovered, marking strong growth rates[25].

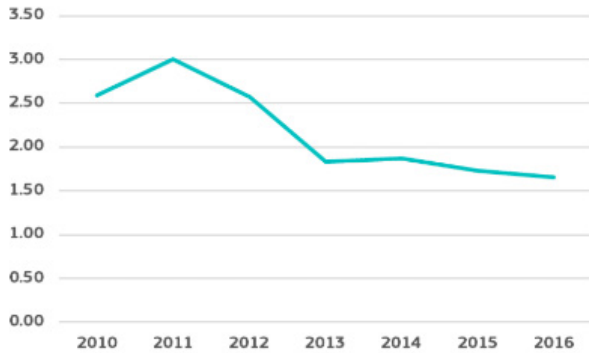
> The number of households steadily increased at an average of 561 since the 2010 reaching the highest number of 573 in 2016, however it is lower than 607 recorded in 2000.

The share of people living in cities increased from 41.8% in 2010 to 43.2% in 2014[26]. Furthermore, the **mean equalised net income** has grown up remarkably by +39.9% over 2010-2015 reaching EUR 9,490, despite a slight decline of 3.1% from EUR 6,782 in 2010 to EUR 6,570 in 2011. However, the Estonian mean equalised net income was well below the EU-28 average of EUR 18,463 in 2015.

> A credit boom was hit by the financial crisis, however outstanding loans started to recover from 2010. The total outstanding residential loans to households rose by 5.9% from EUR 5,973 million in 2010 to EUR 6,323 million in 2015 exceeding the 2008 crisis level (EUR 6,209 million).

Furthermore, the **interest rates on mortgages** for loans over 5 years of original maturity, has been decreasing constantly since 2010 reaching bottom low of 1.66% in 2016 (Figure 8). However, after the rapid expansion in household mortgages prior to the crisis, current lending standards have become more strict in order to keep it stable, however mortgage interest payments from tax bills was reduced[27].

Figure 8: Mortgage rates for loans for over 5 years original maturity (%)



Source: ECB MFI Interest Rate Statistics, 2017.

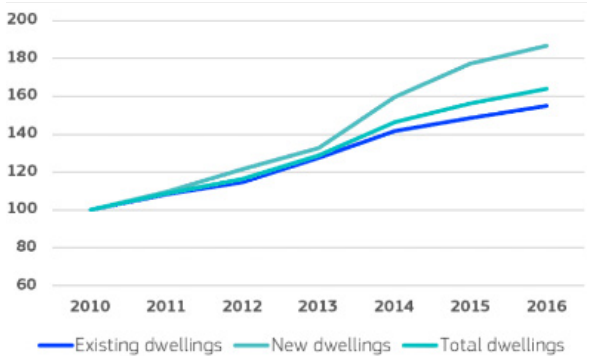
House prices have reflected the dynamic of the housing market, growing by 65.4% growth in 2015 compared the low point of 2009 when the house prices halved. House prices went up again by the average of 10% per year between 2010 and 2014. However, the recent price increases slowed down in 2016, as supply balanced out with demand and thus house market has shown signs of robust recovery[28]. Estonia does not present particular housing supply shortages, due to a combination of low population density and good land availability, which implies that supply of dwellings can keep up with the demand (unlike other countries where the significant price increases observed are fuelled by supply lagging behind demand). Moreover, the regulatory environment of housing planning does not appear to put a burden on housing supply, further contributing to the limited

time required for new properties to be put on the market[29]. Estonia has implemented a large number of fiscal measures to incentivise home ownership. These include, among others, deductible mortgages, non-taxation of gains from selling residential properties and low property taxes, which remain one of the lowest in the EU (0.3% of GDP)[30]. As a result, the rental market remains very limited (only 3% of the total household market), compared to 19% in the EU on average[31].

↑ 65.4%

House price increase between 2009 and 2015

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



Source: Eurostat, 2017.

The majority of the Estonian **building stock** is owner-occupied, with 81.5% owners and 18.5% tenants occupying buildings in 2015. This is partly due to policy that favour home ownership as well as due to the country's culture of home ownership. Nevertheless, the trend over the last decade has gone towards housing rental, as the share of tenants increased from 14.5% in 2010 to 18.5% in 2015 (+27.6%). The distribution of owners and tenants changes only moderately depending on income. The population earning above 60% of median equalised income is more likely to own its own dwelling (84.6% on average) than to be tenant (15.4%). However, the same trend holds for the population earning below 60% of **median equalised income**, with 69% of the population owning of a dwelling and 31% renting one. However, there is limited offer of rental social housing by municipalities for disabled and low-income people, with Tallinn being the only municipality providing such housing for wider population groups.

Moreover, the housing cost overburden rate[32] was relatively low, at 4.3% in 2015, well above the EU-28 average of 6.7% and the lowest value recorded since 2010 (9.8%), showing a generally good housing affordability situation[33]. Likewise, the severe housing deprivation rate[34] is low, stood at 2.8 in Estonia compared to the 4.9% EU average in 2015.

Infrastructure

Estonia ranks 32nd out of 137 in terms of its infrastructure, according to the 2017-2018 Global Competitiveness Report[35] published by the World Economic Forum. In particular, it performs strongly with respect to the quality of its port infrastructure (11th), and shows good performance regarding overall infrastructure quality (20th) and railroad infrastructure (33rd). In contrast, road quality and air transport infrastructure lag behind ranking 38th and 41st, respectively. Nevertheless, the Ministry of Economy approved the investment in infrastructure programme with the total budget of EUR 135 million in 2017. The main investments are allocated to improve road and railway infrastructure as well as development of regional airports[36].

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4

Key issues and barriers in the construction sector

Company failure

The **business demography** in the broad construction sector has shown different trends across sub-sectors. The number of births in the construction, real estate and architectural and engineering activities sub-sectors experienced an important increase between 2010 and 2014[38]. Births in the construction sub-sector increased by 40.6%, from 771 to 1,084, whereas the number of births in the real estate sub-sector went up by 28.1%, from 352 to 451. The situation for architectural and engineering activities also improved, with the number of births growing by 13.1%, from 137 to 155. The number of enterprise deaths has importantly decreased by 13.5% in the construction sub-sector from 1,165 in 2010 to 1,008 in 2014, whereas real estate sub-sector experienced a 10.9% increase, from 433 to 480. Similarly, the number of deaths in the architectural and engineering sub-sector went up by 5.8%, from 138 to 146.

In addition, annual Estonian **bankruptcy** survey conducted by Krediidiinfo AS demonstrated that the number of bankruptcy cases has been falling during the last three years and will most likely remain unchanged in 2017. The total number of bankruptcies in 2016 reached the all-time low level, i.e. only 0.16% of all registered companies went bankrupt (1.6 per thousand companies), a 12% decline compared to 2015, whereas 335 companies were declared insolvent. The number has also been steadily declining for the last six years[39].

Trade credit

The use of **trade credit** remains limited in Estonia, as only 20% of companies consider it a relevant source of finance, according to the 2016 SAFE Survey[40]. This is far below the EU average, where 35% of survey respondents consider trade credit relevant for their business. In addition, 17% of total respondents had used this source of finance during the 6 months' prior the survey, also below the EU average of 19%. However, according to the same survey, 75% 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.

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Late payment

Estonia has transposed the 2011 **Late Payment** Directive into its Law of Obligations Act[42] and its Code of Civil Procedure[43]. In fact, Estonia has the shortest payment durations and delays for public sector to business transactions (PA2B) among other EU member states[44]. According to Intrum Justitia's European Payment Risk Index (EPRI), Estonia is slight below the average, at -0.01, showing that there are some risk and limited payment stability[45]. Notably, the 20% of respondent companies view the risk from their companies' debtors declining in the coming year. Similarly, 85% of respondents mentioned that they have been accepting longer payment terms than they feel comfortable with, which shows that the number is much higher compared to the average share of 61% in the EU. The main causes of **late payments** are debtors' financial difficulties and administrative inefficiency of the national government[46].

For business-to-business (B2B) transactions, the payment duration in Estonia tends to respect the limit of above-mentioned Directive for both public and private debtors. For instance, payment terms allowed for B2B and PA2B transactions averaged 20 and 21 days, respectively, with the average time taken by customers to actually settle the invoice standing at 22 for B2B and the same for PA2B, resulting in a delay of 2 and 1 days, respectively. This demonstrates Estonia's good payment behaviour[48].

Time and cost of obtaining building permits and licenses

> Estonia ranks 9th in 2016 with respect to "Dealing with construction permits", according to the World Bank Doing Business 2017, compared to 10th in 2015[49].

In fact, 10 procedures are required to build a warehouse, lower than the OECD high-income average (12.1), taking 102 days to complete, largely below the OECD high-income average (152.1) (Table 3). In addition, the cost of building a warehouse only represents 0.2% of the value of the warehouse, below the OECD high-income average of 1.6%.

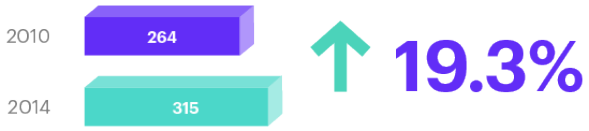
Procedure	Time to complete	Associated costs
1. Obtain project clearance from Fire Department	30 days	no charge
2. Obtain project clearance from Environment Department	29 days	no charge
3. Obtain project clearance from Health Care Department	28 days	no charge
4. Obtain project clearance from Labour Inspections Department	27 days	no charge
5. Obtain building permit	25 days	EUR 585
6. Receive on-site inspection by Municipality	1 day	no charge
7. Receive on-site inspection by Estonian Technical Surveillance Authority	1 day	no charge
8. Apply for permit of use and request final inspection from Municipality	25 days	EUR 64
9. Receive final inspection from Municipality and obtain permit of use	1 day	no charge
10. Obtain water and sewerage connection	20 days	EUR 1,131

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

Skills shortage

The number of **job vacancies**[50] in the construction sub-sector experienced a significant increase (+19.3%) from 264 in 2010 to 315 in 2014, however still 59% lower than pre-crisis level of 768 in 2008. Overall the increasing growth in recruitment shows that the situation has been improving since 2010. Similarly, **adult participation** in education and training in the construction sub-sector increased from 5.1% in 2010 to 7.6% in 2016, reaching its highest peak in 2012 (7.8%). The participation rate for real estate activities stood at 17.1% in 2014. Moreover, the number of **tertiary students** engineering, manufacturing and construction, and particularly in architecture and building, experienced a 7.2% decline over 2010-2015, from 444 to 412.

Number of job vacancies increase between 2010 and 2014



However, despite the introduction of new legislation on initial and continuing **vocational education training**[52], further efforts are required to adapt learning content to the labour market needs. According to CEDEFOP[53], VET trainings need to be more focused on practical learning in order to facilitate access to elementary labour market occupations[54] (see TO 2 – Skills). In addition, further collaboration with private companies is needed to combine the theoretical knowledge with a work-based learning. Specifically, the construction sector is affected by recruitment difficulties when it comes to attracting high-skilled occupations, such as electrical equipment installer and repairer, electrical engineers, building frame and related workers, machinery mechanics and repairers as well as civil engineers[55]. In fact, most bottlenecks occur due to a lack of technical competencies, in particular for skilled manual workers[56].

Sector & sub-sector specific issues

Material efficiency and waste management

In 2013, Estonia reported a total amount of 1,944.1 kilotonnes (kt) of **construction and demolition (C&D) waste**, a 22.9% decrease compared to the previous year (1,499 kilotonnes). Of these, 1,919.4 kt were non-hazardous, whereas only 24.7 kt were hazardous. Out of the total C&D waste generated, 1,867.4 kt were recovered[57].

> The main piece of legislation encompassing all national legislation regarding waste treatment is the Waste Act (RT I 2004, 9, 52)[58], adopted in 2004, and its subsequent amendments. The Waste Act sets the rules for all waste streams and treatment operations and transposes the EU Waste Framework Directive into national law.

Furthermore, the new National Waste Management Plan (WMP) for the period 2014-2020 was adopted, and focuses on promoting financial support to waste management companies to enhance their performance and treatment capacity. Consequently, the Estonian Waste Handlers Association (EJKL) and the EJKL Competence Centre recently developed a separate manual for the collection of construction and demolition waste in order to increase the recovery of waste[59]. Estonia

had already reached the recycling target of the Waste Framework Directive (WFD) (2008/98/EC)[60] as early as 2011, when it achieved a recovery rate of 72%. For 2020, the new WMP aims at a 75% recovery of total C&D waste[61].

Climate and energy

Emissions of greenhouse gases (carbon monoxide and dioxide, methane and nitrous oxides) from construction and real estate activities in Estonia amounted to a total of 198,798.9 and 125,895.2 tonnes in 2014, respectively. Emissions in the construction and real estate activities sub-sectors increased by 76.3% and 60.4% respectively during the period of 2010-2014. Greenhouse gas emissions from manufacturing industries and construction represented 3.3% of total emissions in 2014, which decreased by 26.5% over the period 1990-2014[62].

5

Innovation in the construction sector

Innovation performance

Estonia is classified as Moderate Innovator according to the European Innovation Scoreboard 2017[63]. Its innovation performance decreased by 3.6%, a slight above the EU average and relative to that of the EU in 2010. Estonia is performing well on Non-R&D innovation expenditures, Innovation-friendly environment, Venture capital investments, International scientific co-publications, and Human resources. In addition, Estonia's relatively strong dimensions are Finance and support and Firm investments. However, it performs far below the EU average in terms of its performance in PCT patent applications, Innovators, Linkages between public and private co-publications as well as Sales and Employment impacts[64].

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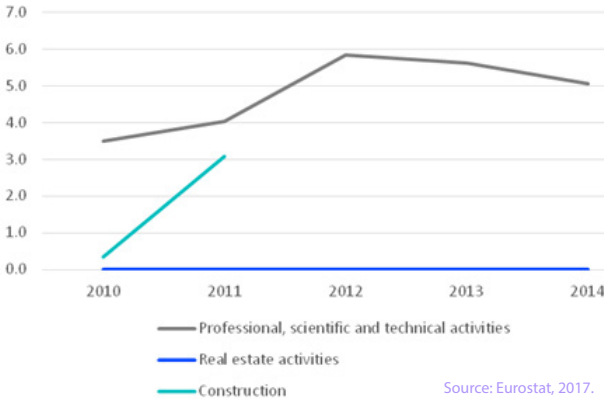
Business enterprise R&D expenditure (BERD) in the broad construction sector has shown a generally increasing trend, although from a low base (Figure 10). BERD in professional, scientific and technical activities sub-sector experienced a 44.4% increase, from EUR 3.5 million in 2010 to EUR 5.1 million in 2014, the highest across the sub-sectors. Similarly, BERD in the construction sub-sector[65] increased from EUR 0.4 million in 2011 to EUR 3.1 million in 2012. On the contrary, BERD in the real estate activities remained negligible since 2010.

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



Source: Eurostat, 2017.

However, the total **R&D personnel** (full-time equivalents – FTE[66]) in the broad construction sector reflected a different trend. Total FTE in the professional, scientific and technical sub-sector experienced an 8.8% decrease over 2010-2014, from 114 to 104, although they remained the highest among the sub-sectors. On the other hand, total FTE in the construction sub-sector registered a minimal increase, growing from 2 FTE in 2011 to 5 FTE in 2012[67]. Conversely, FTE in real estate activities have remained negligible, in line with the BERD.

Nevertheless, Estonia filed a yearly average of 2.6 **construction-related patent applications** over 2010-2016, compared to zero over 2000-2009. This increase in the number of patents (totalling 18 in 2010-2016) reflects the appearance of innovative techniques, products and solutions in the Estonian construction sector. However, and particularly due to the relative small size of the country.

> No Estonian firms rank among the top 1,000 EU companies by R&D according to the 2016 EU R&D Scoreboard[68].

Eco-innovation and digitalisation

In order to boost innovation in the Estonian construction sector and bring about the scaling-up of innovations from the company level to the market, several initiatives have been launched. For instance, the Estonian RD&I strategy "**Knowledge Based Estonia 2014-2020**"[69] aims to create favourable conditions for an increase in productivity and development in the country. This strategy is based in four major pillars: (1) ensuring high level and diversity of research, (2) increasing the economic and social benefit of RD&I, (3) making the structure of the economy more knowledge-intensive through smart specialisation and (4) increasing the visibility of Estonia in international RD&I cooperation. In addition, this strategy outlines the importance of innovative construction, i.e. the development of smart houses[70].

In addition to the general innovation programmes, other initiatives have been launched on specific topics, such as the integration of new technologies on the day-to-day management of the projects. For instance, the **Mobi3Con**[71] project, conducted by the Estonian Innovation Institute, provides end-user communities with a low-cost mobile system for data management at construction sites[72]. This system enables users to access real-time information about building designs and features, which was not accessible before. In addition, Mobi3Con is based on BIM (Building Information Model), aiming to put it into practical use, particularly during the construction phase, as the experience of Estonian construction companies with such technology remains limited[73].

Finally, Estonian construction companies in close cooperation with the government started developing **e-construction cluster** (*Digitaalehitus*) with the budget of EUR 600,000 allocated for the next three years (2016-2018). The aim is to find the most sustainable ways to digitise the Estonian construction sector in order to make construction projects more transparent, reduce the cost of materials, human resources through e-solutions. In this way, by 2020 the construction products and infrastructure will operate under closer and more efficient cooperation between construction stakeholders and in this way, ensure the international competitiveness of Estonian construction enterprises[74].

6

National & Regional Policy & Regulatory Framework

Policy schemes

Housing policy in Estonia is under the responsibility of the construction and housing sector of the Ministry of Economic Affairs and Communications, which offers several support schemes (loans, grants, guarantees, etc.) for the purchase, reconstruction/renovation and demolition of dwellings, in cooperation with KredEx, the national financing institution.

> The scheme Housing Support for Families with multiple Children (Kodutoetus lasterikastele peredele) provides a grant to families for the modernisation and improvement of their dwellings.

Eligible activities covered by the grant include the construction, renovation or expansion of a dwelling, the replacement of utility systems, the purchase of housing, and the repayment of mortgage instalments. The maximum amount of the subsidy is EUR 7,000, which can be doubled to EUR 14,000 if a household has eight or more children[75]. The scheme is open to households whose monthly income does not exceed EUR 355[76].

Similarly, KredEx offers a **Housing Loan Guarantee scheme** *(Eluasemelaenu käendus)* for beneficiaries wishing to take a loan for the purchase of a new dwelling or the renovation of an existing one, contributing to the repayment of their housing loans. The scheme is open to a variety of applicants, including young families with at least one child up to 15 years of age, young professionals (up to 35 years) and veterans of the Estonian Defence Forces. Applicants must provide a down payment equal to 10% of the value of the property and take out a loan repayable over 30 years. They are then entitled to a guarantee on the loan of up to 24% of the value of property, up to a maximum amount of EUR 20,000 (or EUR 50,000 in case of the acquisition of an energy efficient property or the energy efficient renovation of the existing one)[77].

Schemes tailored specifically to apartment associations or cooperatives also exits, offering both guarantees on loans and grants. For instance, the **Apartment Building Loan Guarantee** (*Korterelamulaenu käendus*) is designed for associations wishing to take out a loan for the reconstruction/renovation of the apartment building, in case the associated risk is deemed to be higher than the average (e.g. in case the building is located in a low market value area, or if the cost of the works per m2 is higher than the average). The value of the guarantees can reach up to 75% of the amount of the bank loan[78]. Similarly, the **Reconstruction Grant** (*Rekonstrueerimise toetus*) is available to associations and cooperatives wishing to reconstruct their apartment buildings. The grant can cover 15%, 25% or 40% of the total cost of the construction works, which can include insulation of the building envelope, replacement of windows, front doors, heating systems and ventilation system, installation of renewable energy systems and design/project management costs79. The total budget available amounts to EUR 102 million, which will enable interventions on about 1,000 apartment buildings[80].

> Finally, the Support Measure for the Demolition of Unused Buildings (Lammutustoetus kohalikele omava) aims to help local authorities demolish buildings that have fallen out of use, become unaesthetic, dangerous (e.g. likely to collapse or catch fire) and whose renovation is not feasible.

The recovered plot of land could then be used by the local government for agricultural purposes or turned into public space. The grant scheme covers up to 70% of the demolition costs, up to a maximum of EUR 60,000 per applicant, requiring the applicant to self-finance at least 30% of the works[81]. The total budget available for the programme is EUR 700,000[82].

Insurance and liability related regulations

In Estonia, as stipulated by the Building Act, **liability insurance** is compulsory for certification/inspection bodies which carry out conformity assessments of construction products. Namely, the minimum amount insured is set at EUR 31,955, which covers damages caused to third persons during the operations of the body. As for contractors, they commonly take out Contractor All Risk (CAR) insurance, which covers third party liability and damage to the construction works during the construction phase. Moreover, professionals such as

designers, constructors, consultants and supervisors are required by the client to be covered by a professional civil liability insurance83.

The **construction contract** can detail the requirements of the final construction, and in this case the non-compliance with such requirements is governed by contractual liability. The limitation period in this case is 5 years (and up to 10 years if the obligations under the contract were wilfully breached). Otherwise, if the requirements are not specified in the contract, the Building Act stipulates that the work completed under the construction contract must preserve its safety and quality for a statutory warranty period of at least two years starting from the date of completion, during which the contractor is required to repair the defects that became apparent during this period. Furthermore, the Building Act also stipulates liability under delict, which applies when the plaintiff is not contractually bound to the defendant or if the damage incurred is not included in the contractual obligations of the defendant. In this case, the duration of liability amounts to 3 years[84].

Building regulations

Construction activities in Estonia are governed by two main pieces of legislation, namely the new Building Act and the Planning Act, revised and adopted in 2015.

> The Building Act (Ehitusseadustik) covers aspects related to the design construction, operation and maintenance of buildings, and is structured into two main parts, namely a general section and a special one detailing provisions for major special construction works.

The general section details the basic requirements for buildings and construction works (e.g. mechanical resistance, fire resistance, accessibility for disabled users, etc.), the obligations of persons operating in the field of construction, design requirements, procedure of construction notice and building/use and occupancy permit. The 'special' section governs aspects related to energy efficiency requirements, the set-up of protection zones, electrical installations and provisions regarding the construction of roads, railways, public water bodies and pipes, among others[85]. In addition, as wooden-based materials technology is rapidly developing, which could expand the construction sector, however the current Building Act hinders such development. According to the Ministry of Economic Affairs and Communications, the current construction regulations are under revision aiming to improve the wooden construction sector. Regulations need to be more relaxed in order to allow wooden multiple-floor (five or more) dwellings to be built and in this way expand this sector[86].

> Moreover, the Planning Act (Planeerimisseadus) sets out the principles and requirements for planning, so as to achieve long-term sustainable and balanced spatial development, land use, and built environment.

Namely, planning principles are defined at the national, regional and local government levels[87].

The revised legislations allow for the simplification and speeding up of procedures related to the issuing of building permits and design of construction projects. Under the new Code, construction of buildings may simply require the filing of a notice regarding the start of the works[88], as opposed to applying for a building permit, depending on the size of the building (e.g. construction/renovation/extension of a dwelling between 20-60 m2 only requires the notice). Some smaller buildings do not require notification at all, thus further simplifying building procedures[89]. Moreover, filing the notice is without fee, which reduces the workload for the administrations, and the response span for the authorities to decide whether to issue the permit has been shortened to 10 days. Finally, under the old legislation, design specifications for construction projects were always mandatory, whereas under the new Code design specifications are only needed for construction activities requiring a building permit[90], such as the construction or the expansion of a building.

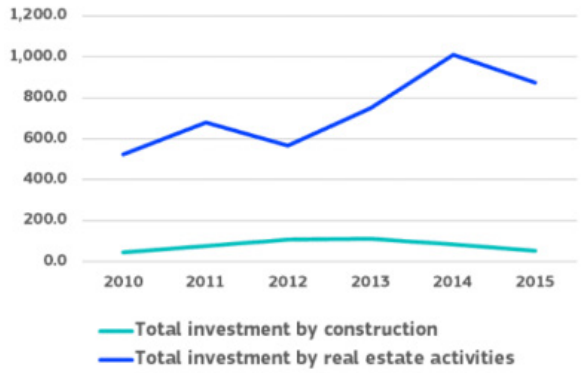
7

Current Status & National Strategy to meet Construction 2020 Objectives

TO 1 - Investment conditions and volumes

Total **investment by the broad construction sector**[91] fluctuated since 2010 but recovered in 2015[92] (Figure 11). In particular, investment by the construction sub-sector went up by 20.4% in 2015 compared to 2010 levels, from EUR 45.5 million to EUR 54.8 million. Similarly, intellectual property products by narrow construction amounted to EUR 4.3 million in 2015, higher than the 2010 value of EUR 1.4 million. Furthermore, investment by real estate activities experienced the same trend and grew up by 66.9% over 2010-2015, from EUR 524.8 million to EUR 875.5 million. In parallel, intellectual property products by the real estate sub-sector increased by 60% over the same time period.

Figure 11: Investment by the Estonian broad construction industry between 2010-2015 (EUR m)



Source: Eurostat, 2017.

Total **investment in construction**[93] increased by 10% over 2010-2016 (Figure 12), however after reaching its peak in 2012 experienced a downward trend. Investment in non-residential construction and civil engineering experienced a similar trend, rapidly growing up until 2012, sharply declined and remained below the 2010 levels. In contrast, investment in dwellings rapidly increased by 116.1% over 2010-2016. In absolute terms, investment in the construction sector totalled EUR 2.5 billion in 2014[94], out of which EUR 767.8 million were invested in dwellings and EUR 1.7 billion were devoted to non-residential and civil engineering[95].

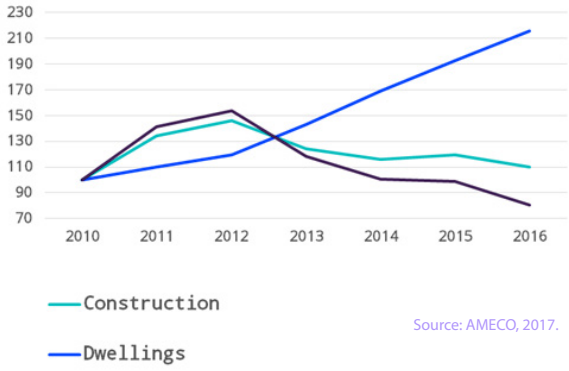
↑ 10%

Total investment in construction2010-2015

↑ 116.1%

Investment in dwellings 2010-2015

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



Source: AMECO, 2017.

In contrast, total **inland infrastructure investment** as a share of GDP did not experience a sharp drop following the global economic crisis but on the contrary in the aftermath of the crisis it increased from 1.2% in 2010 to 1.3% in 2014. Nevertheless, Estonia increased its railway investment substantially (+168.6%) over 2010-2013[96], from EUR 35 million to EUR 94 million. It also increased investment in road infrastructure from EUR 142 million to EUR 158 million (+11.3%). Furthermore, investment levels for road maintenance remained stable over 2008-2011, totalling EUR 39 million in 2011, 2.6% above 2008 levels. Indeed, the quality of main roads has been improving, however the quality of secondary roads has been deteriorating[97].

In parallel, total household renovation spending increased by 41.7% over 2010-2015, from EUR 16.3 million to EUR 23.1 million.

However, as a share of disposable income, renovation spending remained constant and stood at 0.2% over period of 2010-2015, which was below the EU-28 average of 0.8%. Household renovation spending is driven by tightening energy efficiency requirements and various support scheme for renovations in apartments (see Policy schemes). In particular, the Estonian housing stock is characterised by apartment blocks with very low energy efficiency.

Estonia defines its vision for transport in the **National Spatial Plan Estonia 2030+**, whereby the backbone of the transport network will be provided by railroads, as 80% of the Estonian population lives near railway routes[98]. Furthermore, railway infrastructure is key to connect Estonia to the external world. In this regard, the **Rail Baltic** project, to be completed by 2024, plays a strategic role. It will connect Estonia with Central and Western Europe through a high-speed rail connection. In total, the railway will run over 700 km, with 200 km on Estonian territory. The Estonian part of the expenditure amounts to EUR 1.3 billion out of a total of EUR 4.8 billion[99].

With respect to road transport, the National Spatial Plan maintains that the highway network is sufficiently dense, and the focus of investment until 2030 should be on safety and enhanced mobility. To this end, road segments need to be reconstructed, and investment in secondary need to be carried out[100].

> Overall, Estonia's transport investment is heavily reliant on EU funds, with a planned allocation of EUR 524.8 million of EU funding dedicated to transport over the 2014-2020 programming period[101].

Furthermore, in terms of completion of the **Trans-European Transport Network** (TEN-T), the country lies considerably behind the EU average with 34% of the TEN-T road core network completed (compared to 74%) and only 4% of the TEN-T conventional rail network finalised (60% EU average)[102].

The European Investment Bank (EIB) also supports infrastructure investment in Estonia. In 2016, it provided a loan worth EUR 400 million to be spent, among others, on sustainable transport infrastructure. This loan comes as the second tranche of a prior EUR 200 million loan and is aimed at facilitating the absorption of EU Funds, allowing to finance strategic projects with a combination of national resources, EU Funds and EIB financing[103]. The EIB also supported the city of Tallinn in developing urban infrastructure with EUR 67 million loan, notably for the renovation of city streets and roads[104].

Finally, the **Connecting Europe Facility** (CEF), inter alia, supplies funding for transport infrastructure. More specifically, EUR 192 million from the CEF budget are dedicated to transport projects, notably the Rail Baltic project[105].

TO 2 – Skills

Despite recent improvements, vocational education and training (VET) remains relatively unattractive in Estonia with low participation. The Estonian government seeks to increase a share of basic school graduates by 35%-65% pursuing VET as opposed to general secondary education, however the ratio remains around 27% against 73%. Furthermore, apprenticeship programmes play only a minor role in VET education, although the drop-outs students enrolled in apprenticeship demonstrate some improvement, having dropped from 31.4% between 2010 and 2011 to 21.4% between 2015 and 2016, which is the lowest point in the last 6 years[106]. Estonia needs to reform its schooling system taking into account the demographic trends of rapidly decreasing and ageing population as well as adapting the VET system to technological developments.

Despite recent improvements, **vocational education and training** (VET) remains relatively unattractive in Estonia with low participation. The Estonian government seeks to increase a share of basic school graduates by 35%-65% pursuing VET as opposed to general secondary education, however the ratio remains around 27% against 73%.

Similarly, Estonia adopted the **Lifelong Learning Strategy** in 2014, which aims at increasing the attendance of upper-secondary vocational education and providing more apprenticeships. Adult participation in lifelong learning were 12.4% in 2015, slightly above the EU average of 10.7%[107]. In addition, policy action for VET aims at strengthening the link between labour markets and VET curricula and introducing short-term education programmes as well as work-based learning[108]. Skill mismatches have been increasing since the 1990s in the Estonian workforce, with the share of skills-intensive jobs rising, and the share of low-skilled workers remaining approximately the same. Furthermore, employers often demand education requirements that may be unnecessarily high. Conversely, it appears that the Estonian construction industry is more inclined to recruit workers with a lower skills level compared to other countries. In other Nordic countries qualification requirements in construction are often stricter than in Estonia[109].

> In order to improve the skills of the workers in the sector, the **Estonian Association of Construction Entrepreneurs**[110] awards skilled workers with occupational qualifications.

The number of applicants has been increasing at a steady rate, and around 70% of graduates in construction specialities take the occupational qualification examination[111]. Nevertheless, still more than a third (36%) of graduates in construction specialities are not employed in their speciality or are currently unemployed. Therefore, a better cooperation between vocational schools and construction companies remains essential to ensure an adequate integration of these professionals in the labour market.

Nevertheless, efforts are being carried to upgrade the construction workforce, particularly in the area of green and sustainable construction. It is estimated that by 2020 approximately 16,000 qualified and non-qualified workers will need training to deliver buildings with high energy performance. The **EU co-funded projects BUILDEST I & II** aim at upgrading the skills of construction workers, carpenters, construction finishers, heating-, plumbing-, and ventilation technicians, installers of RES system, as well as bricklayers. As part of the project, the "Action Plan for Training Workforce in the Estonian Construction Sector" was developed, which outlines the steps needed to upgrade the skills of the construction workforce, i.e. developing specialised courses, training materials, and schemes to train trainers[112].

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Finally, the Estonian Association of Construction Entrepreneurs offers a series of trainings for construction managers, which range from basic to more specialised (e.g. ventilation, heating, water supply). In addition, with the support of the **EU-sponsored Leonardo programme**, the Association offers opportunities for learning abroad for vocational teachers. In 2013, such a mobility programme dedicated to energy efficiency was organised with Sweden[113].

TO 3 - Resource efficiency / Sustainable construction

Energy saving policy in Estonia is defined through the **Estonian Energy Sector Development Plan** until 2030 (Energiamajanduse arengukava aastani 2030), which covers energy consumption in the transport industry and housing sectors. The Plan sets the national final energy consumption targets, which should not exceed 2,818 ktoe by 2020, with renewable energy accounting for 25% of this total by 2020 (10% in the final energy consumption in the transport sector)[114]. The Plan also highlights the importance of energy efficiency in the housing sector specifically, since it accounts for about 33% of the national energy consumption. In this context, the Ministry of economic Affairs and Communications has put in place a system of financial support schemes through KredEx Funds to boost the energy efficient renovation of residential properties, which resulted in the renovation of over 600 apartments over 2009-2013[115]. Furthermore, KredEx funds will be exhausted by 2018 with renovating an additional number of 1,500 houses, however according the Association of Estonian Real Estate Associations, there is a need to renovate another 14,000 buildings and financial contribution by the Estonian government is essential to implement this renovation strategy[116].

The scheme Small Residential/Detached Buildings Renovation Grant (Väikeelamute rekonstrueerimistoet) offers a grant covering up to 30% of the renovation works on residential properties, with the beneficiary having to finance the rest, up to a maximum amount of EUR 15,000. The programme targets buildings built prior to 1993 and supports activities including roof insulation, replacements of doors and windows, renovation/replacement of heating and ventilation systems and installation of renewable energy systems, among others[117].

The **Support Measure for the Renewal of Residential Heating Systems** (*Väikeelamute küttesüsteemide uuendamise toetus*) aims to stimulate the replacement of fuel-powered heating systems with others based on renewable energy sources in small residential properties (including detached, duplex and terraced houses, as well as two-apartment buildings), so as to reduce their energy consumption and promote the production of energy from renewable sources. Under the scheme, applicants benefit from grants covering up to 40% of the costs associated with interventions such as boiler replacement, purchase of new heating systems, installation of heat pumps, etc., provided that their function on renewable energy sources. The maximum amount of the grant is EUR 4,000 per beneficiary[118]. The total budget available for the measure amounts to EUR 5 million, which derives from the CO2 quota sales between 2014 and 2017[119].

Finally, the **Support for Renovation of Electrical Installations** (**Elektripaigaldiste renoveerimise toetus**) provides grants to apartment associations and non-profit organisations for the replacement of old voltage systems (3x220 V) in buildings with the new system (3x230/400 V) in the city of Tallinn. The support covers up to 50% of the costs associated with the construction works, and can amount to up to EUR 300 per apartment if the apartment block has up to 10 apartments, or up to EUR 250 per apartment if the block has more than 10 apartments, and up to EUR 7,000 per building if the applicant is a non-profit association[120].

TO 4 - Single Market

Estonia presents a good performance with respect to the metrics of the EU Single Market Scoreboard, particularly in terms of Infringements (it reported the lowest number of Single Market cases across all Member States), Internal Market Information System and Transposition of law (which faced some difficulties last year but its performance remained above the EU average). It also shows a high level of trade integration in the single market for goods and services[121]. However, its performance in Public Procurement is satisfactory, especially in terms of the one bidder (i.e. the proportion of contracts awarded with only one bidder) and aggregation (i.e. the proportion of procurement procedures with more than one public buyer) indicators, which is slightly better than the previous year. Moreover, in 2016, 65% of tenders were awarded on the basis of the lowest price criterion only, however as Estonia started implementing the ongoing reform, the performance improved[122]. Services accounted for 33% of the total contracts, followed by supplies (60%) and works 6%[123].

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As for the regulatory environment governing housing planning and construction, it is not considered to be particularly restrictive and therefore does not constitute a barrier for the sector[124]. The introduction of **the new Building Code** (see Building regulations) is also contributing to reducing the administrative burden related to building permits and planning. Furthermore, the government launched the **Zero Bureaucracy project**, which sees the cooperation between the Ministry of Public Administration and the Ministry of Finance in the effort to reduce red tape in various areas, including the construction sector. To facilitate access to the market and make the business operating environment easier and less costly for businesses, all activities resulting from the specific requirements in the sector are being mapped and a methodology to assess their financial implications is being developed. For instance, the project seeks to accelerate the building permit authorisation procedure by introducing e-solutions allowing the concerned parties to follow the course of the application in real time[125]. In addition, active operators in construction-related activities must submit a notice of starting economic activities to the Estonian Technical Surveillance Authority[126] in order to obtain an activity license[127].

Estonia is also considered the least corrupt country in Central and Eastern Europe, with low risk of corruption when dealing with land administration. According to a recent survey, only very few Estonians declared having had to pay a bribe in exchange for construction permits[128]. Nevertheless, all 45 private sector corruption cases in 2015[129] involved the construction sector[130].

With regard to regulated professions, the profession of architect is not regulated in Estonia, and companies and individuals can carry out architectural activities as long as they are registered in the Register of Economic Activities[131]. Similarly, the profession of electrician is unregulated, although Estonia regulates the specific activity of electrical supervisor (i.e. the professional in charge of controlling electrical work and technically inspecting electrical installations), who requires an attestation of competence[132].

Finally, concerning the implementation of **Eurocodes**, all Parts are published as National Standards and National Annexes are published for all Parts (and are available in English), except for the EN 1998 series. Although standards including Eurocodes, are referred to in the Building Code as being good practice for structural design, they are not compulsory. In addition, there is no particular regulatory framework that enforces the use of the Eurocodes in Public Procurement. However, in practice, Eurocodes are the only means for structural design. Moreover, no other Estonian standards on structural design are used in parallel with them[133].

TO 5 - International competitiveness

Estonia ranks 29th out of 137 economies in the 2017-2018 **Global Competitiveness Index**[134]. Due to the economy's reliance on exports, it performs well above the EU average in terms of internationalisation of its SMEs, with the time to export and import being below the EU average. Namely, Estonia's share of SMEs importing and exporting from the outside the EU-28 represents the 3rd and the 5th best performance in the EU, respectively. Namely, the cost of importing was free of charge in 2016, compared to the EU average of USD 6.61 (EUR 5.57), taking 1 hour to export and import (against the EU average of 1.39 and 1.07 respectively)[135]. However, the costs related to administrative export documentation are vastly higher than elsewhere in the EU, amounting USD 50 (EUR 42.10) compared to the EU average of USD 16.43 (EUR 16.43)[136]. This was the only single negative indicator behind the EU average compared to previous years.

Estonia ranks 29th out of 137 economies in the 2017-2018 **Global Competitiveness Index**[137].

Financial support to exporters is provided by KredEx, which offers export loans, credit insurance, investment insurance and production risk insurance. For instance, the **Export Loan** (*Ekspordilaen*) facility is dedicated to companies wishing to finance large-scale export transactions of goods manufactured in Estonia, for activities such as offering a long payment term to a foreign buyer, paying a credit insurance premium or financing the production of goods to be sold to a foreign buyer. Loans are repayable between 2 and 10 years, and can amount up to EUR 3 million[138].

Enterprise Estonia (*Ettevõtluse Arendamise Sihtasutus* – EAS), one of the agencies implementing EU structural funds in Estonia, is also involved in fostering Estonia's competitiveness and supporting Estonian SMEs going international. EAS also promotes participation of Estonian construction companies in international constructions events and fairs. For instance, it allowed 8 construction firms to be represented at Nordbygg 2016, Scandinavia's largest construction industry trade fair. In fact, countries such as Sweden and Finland are primary targets for Estonian construction companies, and the event enables them to strengthen relationships with existing customers as well as build new contacts. EAS is responsible for providing a stand at the event that participating companies can use as a meeting point with other partners, as well as marketing and communication activities[139].

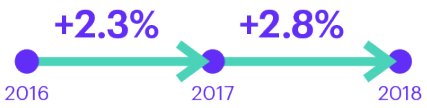
> In addition, in line of Estonian Competitiveness Action Plan "Estonia 2020", which aims to increase the share of public procurement for innovation up to 3% by 2020, EAS together with the Ministry of Economic Affairs launched an Innovation Procurement Program that aimed at organizing innovative-friendly public procurement and in this way stimulating smart co-operation between the private and public sectors.

As part of this Program, the contractor will receive both financial support and knowledge of how to carry out a procurement that will improve public services. Participating companies, including the construction sector, are offered the opportunity, in cooperation with the contracting authority, to develop unique products (and services) that make them more competitive and successful on the market[140].

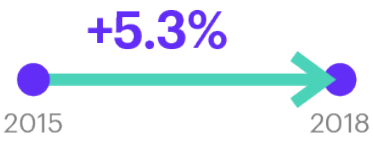
8
Outlook

The Estonian economy has been on the recovery path since 2011, and this positive evolution is expected to continue over the coming years. The economic outlook for the country is positive, with its GDP being forecast to grow by 2.3% in 2017 and by 2.8% in 2018, reaching EUR 18.7 billion and exceeding the pre-crisis level. In parallel, after several years of decline, the national construction sector is predicted to follow a similar trend, with growth being projected at 4.6% in 2017 and slightly lower, 4.5% in 2018. This momentum will carry on until 2022, although the growth rate is expected to slow down in subsequent years and fluctuate between 3.4% in 2019 and 3.9% in 2022[141].

The outlook for the construction sector's GDP



At the same time, the **number of workers** employed in the broad construction sector is projected to increase by 2.3% in 2017 relative to 2015, reaching 83,367 people, and by 5.3% in 2018 (compared to 2015), to 85,846. Similarly, the **number of enterprises** operating in the broad construction sector is forecast to grow by 6.2% in 2017 relative to 2014, reaching 18,637, and by 9.9% in 2018 compared to 2014 levels, reaching 19,270. The **value added** of the broad construction sector is also expected to experience a substantial growth, being projected to rise by 9.9% in 2017 and by 13.8% in 2018, compared to the 2014 levels, amounting to EUR 2.4 billion. These improvements will be accompanied by an increase in **turnover,** expected to grow by 2.2% in 2017 compared to 2015, and by 5.3% in 2018, reaching EUR 8.3 billion.



The outlook for number of workers in broad construction sector

Following a collapse in prices and in the number of transactions, the Estonian real estate market has been picking up, with a rapid increase in lending growth for house purchases. Nevertheless, the fast growth of price and transaction activity is expected to slow down, both for apartments and commercial real estate, as a result of supply adjusting to the recovering demand[142]. This will be the case particularly in Tallinn and Harju County, where prices are projected to decline slightly. Moreover, renovation activities and reconstruction of older apartments will continue to rise, especially in smaller towns[143]. The **residential building sector** is expected to be the primary driver of construction growth up to 2025. Meanwhile **non-residential sector** will likewise observe solid levels of growth, especially from tourism and retail-related buildings and fixed investment[144].

The Estonian civil engineering sector was badly affected by the crisis, with production volumes and investment declining considerably. However, prospects appear to signal a moderate growth for the coming years, mainly driven by public sector projects supported by EU funds, whereas the private sector is not expected to contribute significantly to this growth[145]. Namely, the energy infrastructure segment will experience an average annual growth rate of 1.6% until 2025, reaching a forecast value of EUR 300 million. As for transport infrastructure, it is expected to account for 51.1% of the total value of infrastructure in 2017, reaching EUR 230 million and will be likely remain around the same level by 2025. The Rail Baltica project will be the main contributor to transport infrastructure spending, boosted by the EU funding[146].

In conclusion, the Estonian construction sector appears to have overcome the effects of the crisis, having set out on a path to recovery, in line with the strengthening of the general economy. Nonetheless, future funding secured for infrastructure maintenance and upgrades may not be sufficient to improve intermodal connections, and pessimism as to the outlook of the sector is still widespread, with 20% of Estonian construction SMEs expressing concern for the future[147].

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17 Please note that this 2016 data is a nowcast - please refer to the methodology notes for further details.

18 The gross operating rate is the ratio of Gross Operating Surplus to Turnover, and is an indicator of profitability.

19 Please note that this 2016 data is a nowcast - please refer to the methodology notes for further details.

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