



Chapter **11**

HOUSING AND  
CONSTRUCTION

Lead author: Delton Alderman

# Highlights

---

**European and North American house prices have recovered from the global financial crisis** in 2008-2009 to the extent that, in Austria, Belgium, Canada, Germany and the US, there are concerns about rapidly rising house prices.

In aggregate, **OECD economies are improving**, albeit incrementally. **Unemployment and underemployment remain high** in several OECD countries. This has also been reflected in the **slow recovery** of housing and construction markets in the UNECE region.

**The value of construction increased** by 7.1% in the euro area and by 5.2% in the EU28 between February 2016 and February 2017, **due primarily to improvements in the civil engineering sector**, followed by the building construction sector.

On a monetary basis, **remodelling is the largest component of euro-area residential construction**. New residential construction is forecast to grow at a faster rate than remodelling in the immediate future.

**Housing completions in the Russian Federation achieved a near-record level in 2015**, with 286,129 new residential dwellings put in place.

**All sectors of the US housing market improved in 2016**. Beginner or starter housing remains weak, however, and the number of dwellings built is insufficient to match population growth.

**US household formations are improving** but remain below the historical average.

**Canada's economy improved in 2016** and is expected to continue to grow in 2017 and 2018. Forecasts suggest modest housing demand and starts in Canada in 2017 and 2018.

**There is increasing concern about escalating housing prices** in Vancouver and the Greater Toronto Area.

## 11.1 Introduction

In most countries, remodelling<sup>21</sup> and new housing construction and sales are essential components of the economy, and therefore much research is directed towards the housing sector. Housing is usually considered a primary indicator and driver of the overall economy. In this context, subdued housing markets are, in part, culpable for the overall fragility of many economies in the past few years.

The World Bank (2017a), the International Monetary Fund (IMF, 2017a, b) and the Organisation for Economic Co-operation and Development (OECD, 2017a, b) all project an increasingly positive outlook for global GDP through 2019, which is expected to increase steadily from 2.5% to 3.5%. Although positive, the outlook for countries in the UNECE region is less dynamic; economic projections for the US and the euro area may reflect the sluggishness of past housing markets.

Residential property prices are a component of GDP and also a metric for estimating homeowner wealth. In Canada and the US, briskly rising house prices are a concern because they may portend overvaluation – and houses are becoming unaffordable for many consumers. According to Szemere (2017), house prices continued to increase rapidly in “almost all advanced economies” through the fourth quarter of 2016. Residential prices rose robustly in Australia, Canada and Germany and moderately in the UK and in the US.

## 11.2 European construction market

### 11.2.1 Review and outlook

The Euroconstruct<sup>22</sup> region's construction industry endured very harsh years after the 2008-2009 global financial crisis, with new residential and non-residential construction declining by more than 40%. Total construction output began to increase in 2014 and, since then, new residential buildings have been the primary contributor to an overall (albeit weak) improvement. The Euroconstruct region's construction industry is now 25% smaller than it was at its peak in 2007 (Euroconstruct (2017)).

Residential construction, including renovation, comprised about 47% of total production in 2016 (of which 42% was new construction); the non-residential construction sector made

up 32% (of which 17% was new work); and civil engineering<sup>23</sup> production constituted 21% (Euroconstruct, 2017). Allen (2017) reported that construction increased by 7.1% in the euro area and by 5.2% in the EU28 between February 2016 and February 2017. The gains in both categories were due primarily to improvements in the civil engineering and building construction sectors.



Source: E. O'Driscoll, 2017.

In the Euroconstruct region, the residential construction sector serves about 472 million people in 206 million households. The housing stock is about 233 million units, of which nearly 8% are second homes and 6% are vacant. Homeownership rates vary extensively between countries and regions; for example, it is 38% in Switzerland, 45% in Germany, 50% in Denmark and 54-80% in the remainder of the western subregion countries. Eastern subregion countries typically have greater homeownership rates; for example, Hungary's rate is 90%. The type of structure also varies; for example, apartments comprise 24% of total residential units (including 1+2 family houses<sup>24</sup>) in the UK and 77% in Switzerland (Euroconstruct, 2017).

From 2017 through 2019, new residential spending (new residential construction + residential renovation) is forecast to increase by 2.6% per year, with expenditure on civil engineering expected to increase by 3.1% per year and non-residential by 1.9% per year.

Spending on residential construction is projected to slow in the euro region in the longer term as markets mature in the largest euro-area countries. Structure type has changed recently (e.g. appartments versus 1+2 family dwellings). The share of completed apartments is projected to increase in 12 of the 19 Euroconstruct countries in the period 2016 to 2019. New housing completions are forecast to increase, with

21 The terms remodelling and renovation are used synonymously in this chapter.

22 The Euroconstruct region comprises 19 countries. The western subregion consists of Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the UK. The eastern subregion comprises the Czech Republic, Hungary, Poland and Slovakia.

23 Civil engineering includes large infrastructure projects such as roads, bridges, large buildings and other large public service projects.

24 1+2 family dwellings are detached or semidetached single or multi-unit structures for families.



Source: UNECE/FAO, 2017.

variations by country. France, Germany, Spain, Sweden and the UK are projected to account for 59% of total residential completions in 2017. These countries are forecast to lead housing starts in the near term. Renovation is a bright spot – especially due to the relatively high inventory of older houses in western and northern Europe. Houses typically are renovated because of antiquated fixtures; i.e. poor energy efficiency; fashion; ageing (i.e. converting homes for “ageing-in-place”); and typical repairs (Euroconstruct, 2017).

### 11.2.2 New housing

There were an estimated 1.59 million new housing permits and 1.22 million new housing starts in the Euroconstruct region in 2016 (Euroconstruct, 2017). By comparison, a record 2.78 million homes were permitted in 2006. An estimated 688,000 apartments and 518,000 1+2 family dwellings were started in 2016, and 796,000 apartments and 674,000 1+2 family dwellings were completed (graph 11.2.1) (Euroconstruct, 2017).

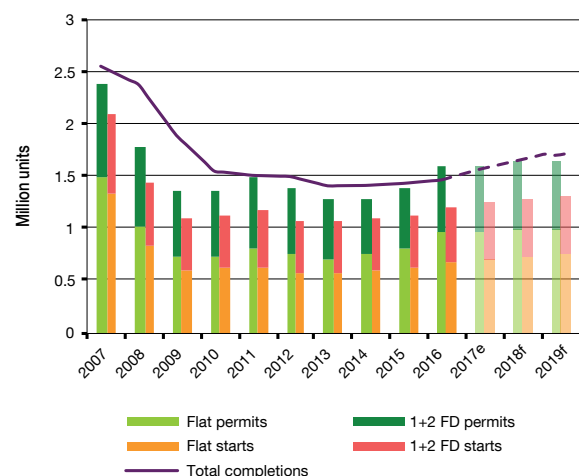
Of countries in the Euroconstruct region, Germany ranks first in both new construction and renovation in the period 2016-2019 (Euroconstruct, 2017). Switzerland makes the top five, despite its relatively small population (table 11.2.1).

### 11.2.3 Non-residential buildings and civil engineering

Non-residential construction is the second most important sector in the Euroconstruct region, accounting for 32% of total construction value. Demand is affected by overall economic conditions and government funding (e.g. for buildings for education and health). Non-residential construction is forecast to expand by 1.9% annually from 2017 to 2019. In the same period, construction output is projected to comprise 20% commercial construction; 17% office buildings; 16% industrial buildings; 12% miscellaneous construction; 13% buildings for education; 8% health buildings; 8% storage buildings; and 6% agricultural construction.

GRAPH 11.2.1

#### Building permits, housing starts and completions, Euroconstruct region, 2007-2019



Notes: FD = family dwellings; e = estimate; f = forecast. Permit data for UK not available. Housing starts of Germany, Netherlands, Portugal, and Hungary not included.

Sources: Euroconstruct, 2012, 2017.

TABLE 11.2.1

#### Top five Euroconstruct region countries for new residential construction and renovation expenditure, 2016-2019 (€ billion)

	2016	2017e	2018f	2019f
<b>New residential construction</b>				
Germany	58.2	62.9	64.7	65.1
UK	48.3	50.5	51.7	52.6
France	39.3	43.1	45.8	46.6
Spain	25.1	27.6	29.4	30.9
Switzerland	21.2	21.3	21.4	21.4
<b>Residential renovation</b>				
Germany	118.2	117.6	117.0	116.4
Italy	66.8	68.9	70.2	70.9
France	60.5	62.7	64.9	66.9
UK	39.3	38.7	38.5	38.5
Netherlands	18.1	18.9	19.3	19.6

Notes: 2016 prices; e = estimate; f = forecast.

Sources: Euroconstruct, 2012, 2017.

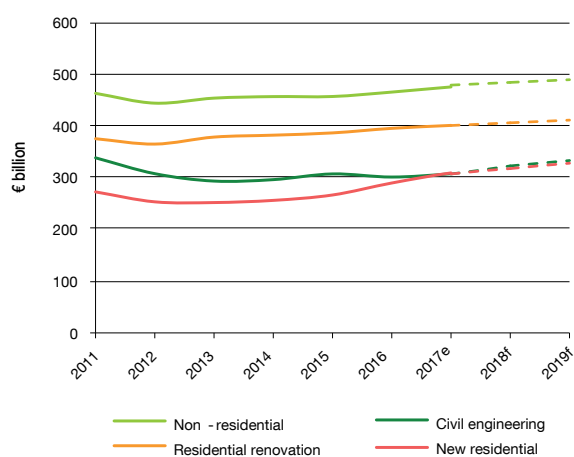
Growth in new non-residential construction in the Euroconstruct region in various subsectors in 2017-2019 is forecast at 9.1% for health; 7.0% for industrial; 6.0% for commercial; 6.1% for storage; 6.0% for agriculture; 5.8%

for office; 4.2% for miscellaneous; and 2.6% for education (Euroconstruct, 2017).

European construction spending is forecast to increase modestly between 2017 and 2019, with non-residential construction forecast to increase by 2.3% in 2017, 1.8% in 2018 and 1.2% in 2019 (graph 11.2.2). New non-residential construction is predicted to increase by 2.8% in 2017, 1.9% in 2018 and 1.0% in 2019 (table 11.2.2). The UK, Germany, France, Spain and Italy (in descending order, by value) were the five largest non-residential markets in 2016 (Euroconstruct, 2017).

**GRAPH 11.2.2**

European construction spending, 2011-2019



Notes: 2016 prices; e = estimate; f = forecast.

Sources: Euroconstruct, 2012, 2017.

**TABLE 11.2.2**

Non-residential construction spending forecast, Euroconstruct region, 2017-2019

	€ billion			Change (%)		
	2017e	2018f	2019f	2016-2017	2017-2018	2018-2019
<b>New construction</b>	250.4	255.2	257.7	2.8	1.9	1.0
<b>Renovation</b>	225.8	229.7	233.2	1.7	1.7	1.5
<b>Total</b>	476.2	484.9	490.9	2.3	1.8	1.2

Notes: 2016 prices; e = estimate; f = forecast.

Source: Euroconstruct, 2012, 2017.

The volume of civil engineering construction is still less than it was at the onset of the global financial crisis in 2008. Various factors are affecting civil engineering projects in different countries. Civil engineering output has improved in the euro area since 2009 (the low point of construction spending in the Euroconstruct region). Modest spending increases are forecast through 2019 (table 11.2.3). In 2016, Germany, France, Italy, the UK and Spain (in descending order, by value) were the five largest civil engineering markets (Euroconstruct, 2017).

**TABLE 11.2.3**

Civil engineering construction spending forecast, Euroconstruct region, 2016-2019 (€ billion)

	New civil engineering construction	Civil engineering renovation	Total civil engineering
<b>2016</b>	171.7	130.9	302.6
<b>2017e</b>	174.9	133.8	308.7
<b>2018f</b>	181.6	138.1	319.7
<b>2019f</b>	189.5	141.7	331.2

Notes: 2016 prices; e = estimate; f = forecast.

Source: Euroconstruct, 2017.

## 11.2.4 Residential construction and renovation

According to the 83rd Euroconstruct conference, the total value of the residential market (new construction and renovation) improved minimally in 2016, although it was still higher than the combined value of the non-residential and civil engineering markets. Residential construction increases are being driven primarily by new housing construction, which is recovering after several years of stagnating and declining volumes. The value of new residential construction is projected to increase by 3.7% in 2017, 2.4% in 2018 and 1.7% in 2019. The forecast value of total residential construction in 2017 is €706.5 billion, increasing to €723.4 billion in 2018 and to €735.8 billion in 2019 (table 11.2.4). On average, total new residential construction is forecast to increase by 4.1% (in nominal terms) annually from 2017 to 2019 (Euroconstruct, 2017).

New residential construction is a vital sector in the euro area. This is projected to increase from €307.1 billion in 2017 to €325.9 billion in 2019. New residential construction is forecast to increase 6.8% in 2017, 3.7% in 2018 and 2.4% in 2019 (Euroconstruct, 2017).

Residential renovation is forecast to remain the principal construction activity in the euro region, increasing from €399.4 billion in 2017 to €409.9 billion in 2019. Housing renovation is forecast to increase by 1.5% in 2017, 1.4% in

2018 and by 1.2% in 2019. Home renovation projects have historically been supported by government programmes (Euroconstruct, 2017).

TABLE 11.2.4

#### Residential new construction and renovation spending forecast, Euroconstruct region, 2017-2019 (€ billion)

	New construction	Renovation	Total residential
2017e	307.1	399.5	706.5
2018f	318.3	404.9	723.3
2019f	325.9	409.9	735.8

Notes: 2016 prices; e = estimate; f = forecast.

Source: Euroconstruct, 2017.

### 11.2.5 Construction sector shares and growth: contrasting western and eastern Europe

In the Euroconstruct's western subregion, total residential construction expenditure is predicted to increase from €686.0 billion in 2017 to €712.4 billion in 2019. Total residential construction spending in the Euroconstruct's eastern subregion is forecast to increase from €20.5 billion in 2017 to €23.4 billion in 2019 (Euroconstruct, 2017).

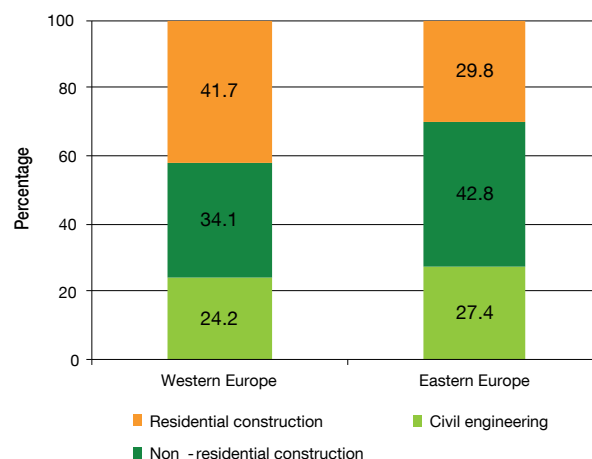
In spending terms, new residential construction is the leading sector in the Euroconstruct's western subregion (41.7% of total construction spending), followed by new non-residential building (34.1%) and civil engineering (24.2%). Spending in the eastern subregion amounted to 6.5% of total European new construction expenditure in 2016. New civil engineering and new non-residential construction accounted for 70.2% of new construction expenditure in the eastern subregion, with new residential construction making up the remainder (29.8%) (graph 11.2.3) (Euroconstruct, 2017).



Source: AHEC, 2017.

GRAPH 11.2.3

#### Share of new construction, by Euroconstruct subregion and sector, 2016



Source: Euroconstruct, 2017.

## 11.3 CIS construction market, with a focus on the Russian Federation

### 11.3.1 Housing construction in the Russian Federation, 2015-2017

Wooden housing construction made up 15.7% of total housing construction volume in the Russian Federation in 2015 and 35% of low-rise construction, according to Oleg Panitkov, General Director of the Association of Wooden Housing Construction (Chernakov, 2016). The total volume of the wooden housing construction market was estimated at 536 billion roubles (\$8.8 billion<sup>25</sup>) in 2015.

According to Lulkin (2016), there are several reasons for the wooden house construction sector's diminished share of housing construction in the Russian Federation, including product standards and land-use and technical regulations. Gurvich (2017) voiced similar concerns and stated that the construction industry foresees minimal prospects for wooden housing because there is insufficient demand for it to enter the market, and credit is lacking.

To address performance and regulatory issues, the Russian Federation Ministry of Construction, Housing and Utilities is addressing housing standards, land-use and technical regulations, energy efficiency, multi-storey structures, and green construction requirements to increase the demand

<sup>25</sup> Converted to US dollars using the UNECE Statistical Database 2015 annual exchange rate of 60.94 roubles to the US dollar.

for wooden structures (Construction.RU, 2017). In addition, the Russian Federation Ministry of Industry and Trade has set objectives that include achieving a 30% share of new housing for wooden housing construction and for the total value of wooden housing construction to comprise 1.0% of Russian GDP (Gurvich, 2017). The Federal State Statistics Service (2017) reported that 286,129 new residential dwellings, and a total of 306,391 buildings, were put in place in the Russian Federation in 2015, an increase of 1.1% over 2014. Overall, 415.7 million m<sup>2</sup> of residential floor space was put in place in 2015, an increase of 2.8%, year-on-year.

Approximately 1.19 million apartments were constructed in the Russian Federation in 2015, with 71.4 million m<sup>2</sup> of residential space constructed, a decrease of 4.7% compared with 2014. Private developers built 272,000 units of the total, with an area of 35.8 million m<sup>2</sup>, which was nearly 3.1% more than in 2014 (Federal State Statistics Service, 2017).

According to PMR (2017), the number of new homes commissioned in 2016 decreased by nearly 3.4%, year-on-year, to 1.15 million units; despite the drop, this was the second-highest number of commissioned houses recorded in one year in the Russian Federation, with the highest-ever number recorded in 2015. PMR (2017) reported that total residence floor space decreased by 6.7% in 2016, to 79.3 million m<sup>2</sup>, which was the third-highest quantity ever reported in the Russian Federation.

PMR (2017) noted that the growth of multi-dwelling buildings was driven by a rapidly developing mortgage market. Mortgage-backed transactions may have accounted for nearly 30% of all home sales in the Russian Federation in 2016, up from 27% in 2015. PMR (2017) projected that the mortgage market would continue to grow in 2017, by nearly 20% (PMR, 2017).

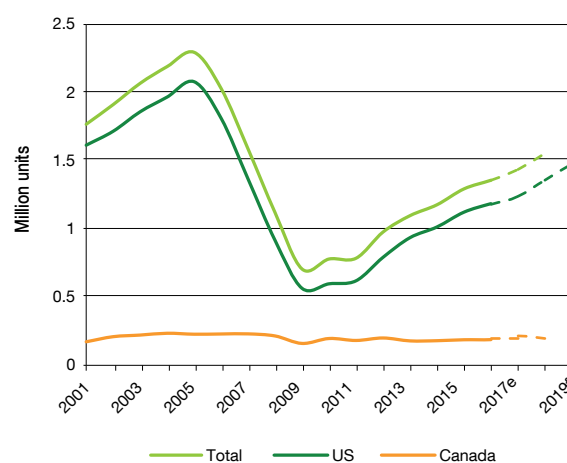
According to the World Bank (2017b), "*Russia has entered a path to recovery and (...) Russia's economy showed signs of overcoming the recession caused by the shocks of low oil prices and economic sanctions*". The projected growth rate in the Russian Federation is 1.3-1.4% for the period 2017-2019 (World Bank, 2017b). This is based on increasing oil prices and stable macroeconomic conditions.

## 11.4 North American construction market

The US housing market continues to improve from a low point in 2009, and the Canadian market remains steady (graph 11.4.1). Although the overall US housing market has recovered, new single-family house construction and sales are still far below their historical averages. The primary concern in Canada is valuation, or overvaluation, with housing prices at historic highs, even after adjusting for inflation.

GRAPH 11.4.1

### Housing starts, North America, 2001-2019



Notes: e = estimate; f = forecast. No forecast is available for Canada for 2019.

Sources: US Census Bureau, 2017a; CMHC, 2017; Mortgage Bankers Association, 2017.

### 11.4.1 The US housing market

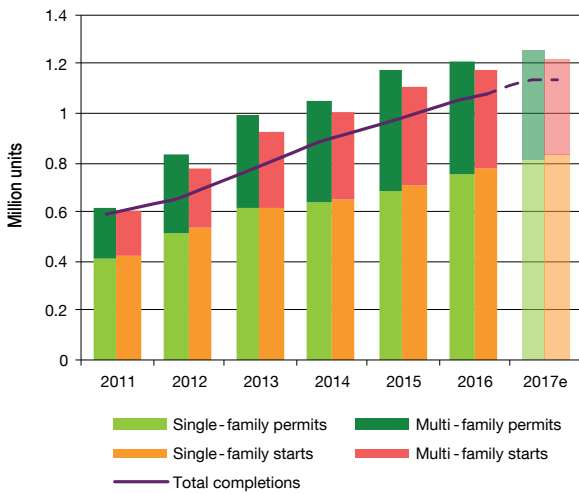
The US housing market experienced moderate growth in 2016 – although there were fewer starts than the 1959-to-2007 average of 1.55 million total units and 1.10 million single-family units. On a per capita basis, new single-family starts in 2016 were 40.9% lower than the 1959-to-2007 average. Housing starts were estimated at a seasonally adjusted annualized rate (SAAR) of 1.16 million in April 2017, a decrease of 2.4% from April 2016, year-on-year (graph 11.4.2) (US Census Bureau, 2017a).

New single-family sales were 24.2% lower in 2016 than the 1963-to-2007 average of 697,000 units, on a per capita basis. New single-family sales and starts are crucial for the wood products industry because new single-family units consume more value-added products than any other wood-consuming sector. There were 561,000 new-home sales (i.e. sales of newly constructed homes) in 2016, SAAR (US Census Bureau, 2017b). The volume of new single-family house sales in 2016 was similar to the average in 1963-1970, when the civilian noninstitutional population averaged 129.3 million, compared with 253.5 million in 2016 (Federal Reserve Bank of St. Louis, 2017). The number of single-family units being built is insufficient to cater for population growth.

The median price for single-family units was \$316,200 in 2016, up by 6.7% from 2015 (\$296,400). The mean price was \$372,500, an increase of 3.3% over 2015 (\$360,600). The completed median house size in the US was 225 m<sup>2</sup> in 2016, down from 229 m<sup>2</sup> in 2015. Over the same period, the

**GRAPH 11.4.2**

**US housing permits, starts and completions, 2011-2017**



**Notes:** e = estimate (January-April 2017 data); SAAR = seasonally annualized adjusted rate.

**Sources:** US Census Bureau, 2017a; Mortgage Bankers Association, 2017.

average square area also decreased, from 250 m<sup>2</sup> to 245 m<sup>2</sup> (US Census Bureau, 2017b, c).

Sales of existing (i.e. previously owned) homes increased by 3.8% in 2016, from 5.3 million in 2015 to 5.5 million in 2016. The median existing-house sale price in April 2017 was \$252,800, which was 5.8% higher than in April 2016 (\$238,900; National Association of Realtors, 2017). The rapid increase in house prices – both new and existing – is raising concerns that housing affordability may be a problem in the future (Joint Center for Housing, 2017a).

Total private residential construction spending (i.e. single-family, multi-family and remodelling) increased by 5.5% in 2016, year-on-year, to \$457.8 million (graph 11.4.3). New single-family construction spending increased by 4.3%, to \$243.0 million; multi-family expenditure increased by 15.7%, to \$60.4 million; and house renovation spending increased by 4.0%, to \$154.4 million (all SAAR; nominal US dollars and euros). Spending on remodelling was estimated at \$221.1 million in 2015 (Joint Center for Housing, 2017b), and this is projected to rise to \$243.0 million by 2020 (US Census Bureau, 2017d).

Private non-residential spending increased by 8.0% in 2016, year-on-year, to \$421.1 million (graph 11.4.3). Public expenditure decreased by 2.2%, to \$279.2 million (nominal US dollars) (US Census Bureau, 2017d).

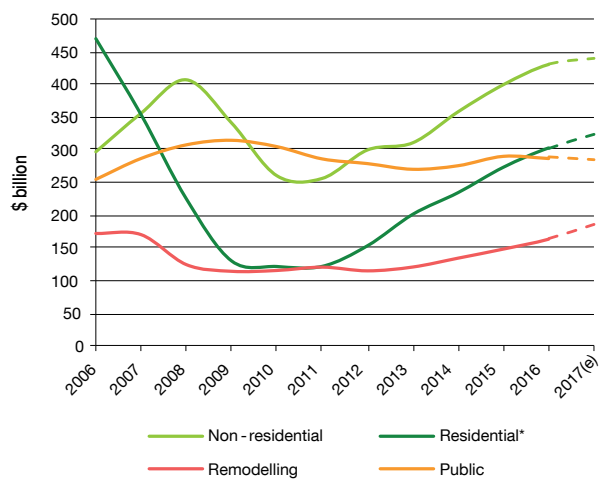
Historically, US housing construction and sales have been a major component of US GDP. Housing's contribution to GDP includes: residential investment (construction of new single- and multi-family houses, residential remodelling,



**Source:** APA, 2017.

**GRAPH 11.4.3**

**US construction spending, 2006-2017**



**Notes:** \*Private residential spending less remodelling expenditure (SAAR); nominal values; e = estimate (January-April 2017 data).

**Source:** US Census Bureau, 2017b.

the production of manufactured homes, and brokers' fees); housing services spending (rent, owner's equivalent rent, and utilities); and expenditure on furnishings and durable goods. Before the housing crash and the global financial crisis, the



contribution of housing to GDP averaged 17-19%; it was 15.3% in 2015, compared with 18.6% in 2005. Residential investment is the crucial component: it peaked in 2005 at 6.5% of total GDP and averaged 4.9% from 1963 to 2006. Residential investment was 3.6% in 2015 and 3.8% in 2016 – another indication that the new-housing construction sector has further room to expand (US Bureau of Economic Analysis, 2017).

### 11.4.2 United States construction outlook

The US housing market continues to improve; all housing subsectors have progressed since 2009, the market's low point. According to many housing analysts, a robust housing construction and sales market is hindered by a deficiency of inventory for sale (new and existing houses); a lack of land or lots available for new construction; a dearth of construction workers in some locations; regulatory burdens; a lack of financing for builders and potential buyers; student debts from higher education; changing attitudes towards house ownership; underemployment and stagnant-to-declining median incomes; and the lack of starter houses being built for first-time buyers (regarding the latter, it should be noted that several construction firms have begun targeting this demographic). There is also a tendency for "millennials" (i.e. adults born in 1982 or later) to live with their parents. An additional factor is the low level of household formations: although improvement was reported in 2016, household formations remain below their historical average.

The Mortgage Bankers Association (2017) projected single-family housing starts in the US at 865,000 units in 2017, 965,000 in 2018 and 1,075,000 in 2019. Total starts are projected at 1,263,000 units in 2017, 1,360,000 in 2018 and 1,465,000 in 2019. The Mortgage Bankers Association (2017) also forecast new single-family sales at 630,000 units in 2017, 695,000 in 2018 and 729,000 in 2019. Existing sales are projected at 5,741,000 units in 2017, 6,038,000 in 2018 and 6,218,000 in 2019.

### 11.4.3 Canadian housing construction market

Concerns are being raised in Canada about rising house prices, particularly in greater Toronto and Vancouver. Specifically, the Royal Bank of Canada has warned that the probability of a precipitous decline "... has increased due to increasing evidence of overheating in Ontario" (RBC, 2017a). Caranci *et al.* (2017a) stated that, "Home prices across the Greater Toronto Area and surrounding areas appear to be detaching from fundamentals and are simply unsustainable".

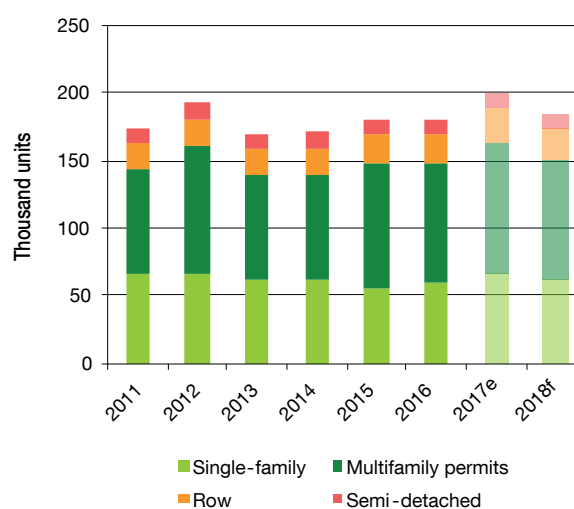
The Canadian new construction housing market was estimated at 198,000 starts in 2016 and 190,000-201,000 starts in 2017, and the forecast is for 180,000-187,000 starts

in 2018 (Scotia Bank, 2017; Caranci *et al.*, 2017a). Of the projected starts in 2016, 60,544 were single-family; 9,942 were row house units; 22,075 were semidetached units; and 87,975 were multi-family. In 2017, starts are estimated at 66,955 for single-detached units; 25,393 for row house units; 10,804 for semidetached units; and 96,598 for multi-family units (graph 11.4.4) (CMHC, 2017). House sales were estimated at 525,400 units in 2016 and 507,500 units in 2017, and the forecast is for 485,300 units in 2018 (RBC, 2017b). The Canadian Real Estate Association (2017) projected sales at 527,400 units in 2017 and 523,200 units in 2018.

According to Caranci *et al.* (2017b), the Canadian economic forecast is for a continuation of solid economic growth in 2017 and a moderate pace in 2018. The reduction in growth in 2018 is due to a shift towards economic growth arising from "business investment, government spending, and international trade", which is expected to offset constrained consumer spending and residential investment growth. The team also noted that "the improved outlook does not diminish the amount of risks. A disorderly correction of housing markets would have far-reaching implications, while the renegotiation of NAFTA remains the key external risk".

GRAPH 11.4.4

Housing starts, Canada, 2011-2018



Notes: e = estimate; f = forecast.

Sources: CMHC, 2017; Scotia Bank, 2017; Caranci *et al.*, 2017.

## 11.5 Conclusions

Housing construction in the UNECE region is incrementally increasing in both the European and North American subregions. In Canada, and in cities such as San Francisco and Los Angeles in the US, there is growing concern about escalating house prices. Some analysts think that the increases are unsustainable and might result in unaffordable housing options for many potential house buyers. According to PMR (2017), there was a contraction in the CIS (in the Russian Federation) in 2016, and the CIS economic situation appears

to be improving. Additionally, there is pent-up demand for housing in the Russian Federation, both in renovation and in the replacement of ageing structures.

In the UNECE, the overall economies of individual countries can be used as indicators of current and future housing construction. As such, the World Bank, the IMF, and the OECD project constrained GDP growth for the aggregate UNECE region, where construction and renovation are major components of economies. Slow-growth economies are challenging for housing construction; a lack of improvement in construction, in turn, is challenging for economic growth.

## 11.6 References

- Allen, T. 2017. Production in construction up by 6.9% in euro area. Eurostat.  
Available at: <http://ec.europa.eu/eurostat/documents/2995521/7992111/4-20042017-AP-EN.pdf/1cdc48c8-7bc5-4416-8906-6860b0f420f4>
- Canadian Real Estate Association. 2017. Quarterly forecasts. Available at: [www.crea.ca/housing-market-stats/quarterly-forecasts](http://www.crea.ca/housing-market-stats/quarterly-forecasts)
- Caranci, B., Burleton, D., Marple, J., Raptis, F., Preston, L., DePratto, B. and Orlando, J. 2017a. Canada's growth back on solid footing, but housing risks increasing. Quarterly economic forecast - March. TD Economics.  
Available at: [www.td.com/document/PDF/economics/qef/qefmar2017\\_canada.pdf](http://www.td.com/document/PDF/economics/qef/qefmar2017_canada.pdf)
- Caranci, B., Burleton, D., Marple, J., Raptis, F., Preston, L., DePratto, B. and Orlando, J. 2017b. Inflation plays hide and seek with maturing expansion. Quarterly economic forecast - June. TD Economics.  
Available at: [www.td.com/document/PDF/economics/qef/qefjun2017\\_canada.pdf](http://www.td.com/document/PDF/economics/qef/qefjun2017_canada.pdf)
- Chernakov, A. 2016. What is preventing the Russian wooden house construction market from developing? Russian Construction.com. Available at: <http://russianconstruction.com/technology/25365-what-is-preventing-the-russian-wooden-house-construction-market-from-developing.html>
- CMHC. 2017. Housing market outlook. Canada Mortgage and Housing Corporation (CMHC).  
Available at: [www.cmhc-schl.gc.ca/odpub/esub/68456/68456\\_2017\\_Q02.pdf](http://www.cmhc-schl.gc.ca/odpub/esub/68456/68456_2017_Q02.pdf)
- Construction.RU. 2017. Wooden housing construction to become priority in Russia.  
Available at: <http://russianconstruction.com/news-1/26424-wooden-housing-construction-to-become-priority-in-russia.html>
- Euroconstruct. 2012. 74th Euroconstruct summary report. Outlook for the world's key construction markets. 74th Euroconstruct Conference, December 2012. Munich, Germany.
- Euroconstruct. 2017. 83rd Euroconstruct summary report. European construction: market trends until 2019. 83rd Euroconstruct Conference, June 2017. Amsterdam, the Netherlands.
- Federal Reserve Bank of St. Louis. 2017. Civilian noninstitutional population.  
Available at: <https://fred.stlouisfed.org/series/CNP16OV>
- Federal State Statistics Service. 2017. Current Statistical Survey Magazine, 1(96). Moscow.  
Available at: [www.gks.ru/free\\_doc/doc\\_2016/magazine/st\\_ob1-eng.pdf](http://www.gks.ru/free_doc/doc_2016/magazine/st_ob1-eng.pdf)
- Gurvich. 2017. Wooden housing construction: ministries are planning, business is staying aside.  
Available at: <http://russianconstruction.com/business/27785-wooden-housing-construction-ministries-are-planning-business-is-staying-aside.html>
- IMF. 2017a. World Economic Outlook, April 2017: gaining momentum? International Monetary Fund (IMF).  
Available at: [www.imf.org/en/Publications/WEO/Issues/2017/04/04/world-economic-outlook-april-2017](http://www.imf.org/en/Publications/WEO/Issues/2017/04/04/world-economic-outlook-april-2017)
- IMF. 2017b. 2017 Article IV consultation with the United States of America – concluding statement of the IMF mission. International Monetary Fund (IMF). Available at: [www.imf.org/en/News/Articles/2017/06/27/ms062717-2017-article-iv-consultation-with-the-united-states-of-america](http://www.imf.org/en/News/Articles/2017/06/27/ms062717-2017-article-iv-consultation-with-the-united-states-of-america)
- Joint Center for Housing. 2017a. The state of the nation's housing 2017.  
Available at: [www.jchs.harvard.edu/research/state\\_nations\\_housing](http://www.jchs.harvard.edu/research/state_nations_housing)
- Joint Center for Housing. 2017b. Demographic change and the remodeling outlook.  
Available at: [www.jchs.harvard.edu/research/publications/demographic-change-and-remodeling-outlook](http://www.jchs.harvard.edu/research/publications/demographic-change-and-remodeling-outlook)
- Lulkin, G. 2017. Why do we not build wooden houses.  
Available at: <http://russianconstruction.com/government/23039-why-do-we-not-build-wooden-houses-.html>
- Mortgage Bankers Association. 2017. MBA mortgage finance forecast. June.  
Available at: [www.mba.org/Documents/Research/Mtg%20Fin%20Forecast%20Jun%202017.pdf](http://www.mba.org/Documents/Research/Mtg%20Fin%20Forecast%20Jun%202017.pdf)

- National Association of Realtors. 2017. April existing-home sales ease. News release.  
Available at: [www.realtor.org/news-releases/2011/05/april-existing-home-sales-ease](http://www.realtor.org/news-releases/2011/05/april-existing-home-sales-ease)
- OECD. 2017a. OECD world economic outlook, 2017(1). Organisation for Economic Co-operation and Development (OECD).  
Available at: [www.oecd.org/eco/outlook/statistical-annex-oecd-economic-outlook-june-2017.pdf](http://www.oecd.org/eco/outlook/statistical-annex-oecd-economic-outlook-june-2017.pdf)
- OECD. 2017b. OECD Russian Federation – economic forecast summary (June 2017). Organisation for Economic Co-operation and Development (OECD). Available at: [www.oecd.org/eco/outlook/russian-federation-economic-forecast-summary.htm](http://www.oecd.org/eco/outlook/russian-federation-economic-forecast-summary.htm)
- PMR. 2017. Annual mortgage lending in Russia to reach record high level in 2017. April.  
Available at: [www.cceconstruction.com/analysis/1388/annual-mortgage-lending-in-russia-to-reach-record-high-level-in-2017](http://www.cceconstruction.com/analysis/1388/annual-mortgage-lending-in-russia-to-reach-record-high-level-in-2017)
- RBC. 2017a. Canadian housing health check. April. RBC Economics. Royal Bank of Canada (RBC).  
Available at: [www.rbc.com/economics/economic-reports/pdf/canadian-housing/healthcheck-april17.pdf](http://www.rbc.com/economics/economic-reports/pdf/canadian-housing/healthcheck-april17.pdf)
- RBC. 2017b. Home resale and price forecast. July. RBC Economics. Royal Bank of Canada (RBC).  
Available at: [www.rbc.com/economics/economic-data/pdf/home-resale-fcst\\_can.pdf](http://www.rbc.com/economics/economic-data/pdf/home-resale-fcst_can.pdf)
- Scotia Bank. 2017. Economic commentary: Canada and the provinces.  
Available at: [www.gbm.scotiabank.com/scpt/gbm/scotiaeconomics63/ec\\_comm.pdf](http://www.gbm.scotiabank.com/scpt/gbm/scotiaeconomics63/ec_comm.pdf)
- Szemere, R. 2017. Global developments in residential property prices – fourth quarter of 2016. Bank of International Settlements.  
Available at: [www.bis.org/statistics/pp\\_residential.pdf](http://www.bis.org/statistics/pp_residential.pdf)
- US Bureau of Economic Analysis. 2017. Housing's contribution to gross domestic product (GDP). 1.1.10.  
Available at: [www.bea.gov/itable](http://www.bea.gov/itable)
- US Census Bureau. 2017a. New residential construction in April 2016.  
Available at: [www.census.gov/construction/nrc/pdf/newresconst\\_201604.pdf](http://www.census.gov/construction/nrc/pdf/newresconst_201604.pdf)
- US Census Bureau. 2017b. Median and average sale price of new homes sold in the United States.  
Available at: [www.census.gov/construction/nrs/pdf/uspricemon.pdf](http://www.census.gov/construction/nrs/pdf/uspricemon.pdf)
- US Census Bureau. 2017c. New privately owned housing units started in the United States by purpose and design.  
Available at: [www.census.gov/construction/nrc/pdf/quarterly\\_starts\\_completions.pdf](http://www.census.gov/construction/nrc/pdf/quarterly_starts_completions.pdf)
- US Census Bureau. 2017d. Value of private construction put in place – seasonally adjusted annual rate.  
Available at: [www.census.gov/construction/c30/pdf/privsa.pdf](http://www.census.gov/construction/c30/pdf/privsa.pdf)
- World Bank. 2017a. Global economic prospects, a fragile recovery.  
Available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/26800/9781464810244.pdf>
- World Bank. 2017b. From recession to recovery. Russia Economic Report, 37.  
Available at: [www.worldbank.org/en/country/russia/publication/rer](http://www.worldbank.org/en/country/russia/publication/rer)