

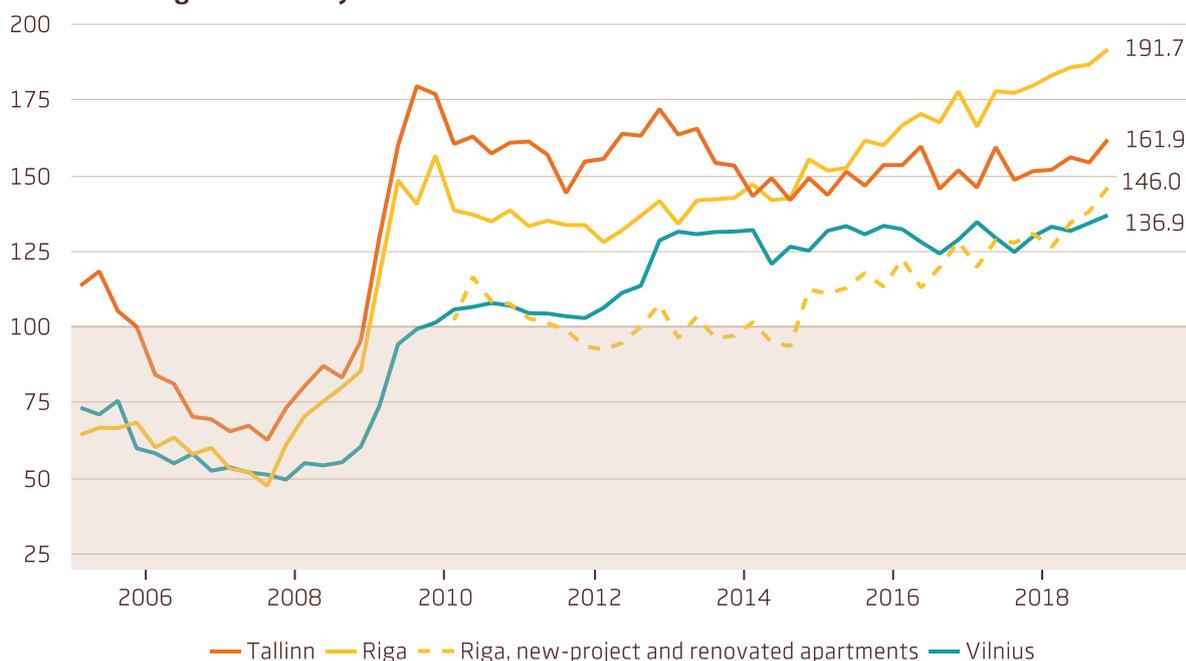
# Baltic Housing Affordability Index

**In the fourth quarter of 2018, the housing affordability index (HAI) increased in all Baltic capitals on annual basis**

- ▶ In Tallinn, the HAI rose by 10.4 points to 161.9 as rapid wage growth outweighed growing apartment prices and interest rates.
- ▶ In Riga, the HAI improved by 12 points to 191.7 as wage growth outpaced apartment price growth. For new-project and renovated apartments, the HAI increased by 15.2 points to 146.0.
- ▶ In Vilnius, the HAI increased by 7 points to a record high of 136.9 as strong wage growth compensated for rising mortgage interest rates.

The housing affordability index (HAI) is calculated for a family whose income is equal to 1.5 of average net wages with an average-sized apartment of 55 square meters. The HAI is 100 when households use 30% of their net wages for mortgage costs. When the HAI is at least 100, households can afford their housing, according to the established norm. The higher the index, the greater the affordability.

## Baltic Housing Affordability Index



Sources: Swedbank Research & Macrobond.

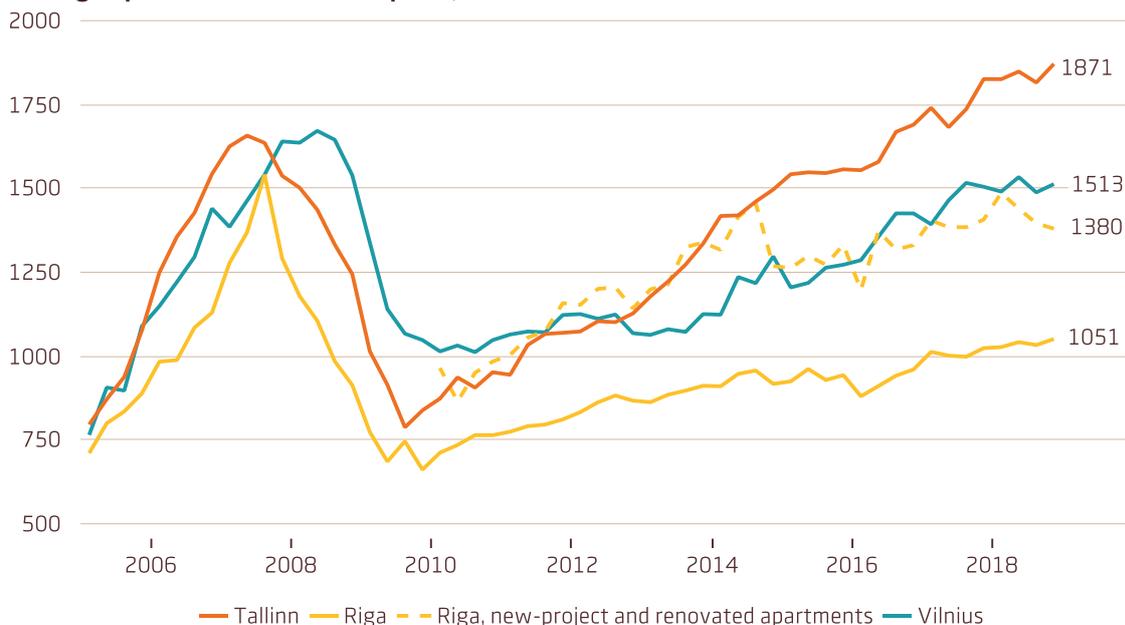
The HAI value of 161.9 in Tallinn means that the net wages of a household in this city are 61.9% higher than required to afford an apartment, according to our norm (mortgage costs account for 30% of the net wages of a household that earns 1.5 of the average net wage). Meanwhile, in Riga, household net wages are 91.7% higher (46.0% for new-project and renovated apartments) – and, in Vilnius, 36.9% higher – than required to fulfil the norm.

## Components of HAI: apartment prices, interest rates, and wages

### Average apartment transaction prices

In the fourth quarter of 2018, annual average price growth moderated slightly in both Tallinn and Riga; prices grew very modestly in Vilnius after a slip into negative territory a quarter earlier.

Average apartment transaction price, EUR/m<sup>2</sup>



Sources: National land services and boards, Swedbank Research & Macrobond.

Last year, housing affordability in **Tallinn** slightly improved, as rapid net wage growth outpaced average apartment price growth and interest rate growth. However, during the last five years, housing affordability in Tallinn has remained roughly at the same level. Last year, average apartment price growth in Tallinn moderated to 5%, while the capital residents' net wage growth was two times higher – 10%. Behind the rapid growth of the average wage was the shortage of labour, a hike in the minimum wage, and income tax reform.

In 2018, activity in the residential real estate market decreased by 0.5% in Tallinn. In the last years, the share of newly built apartments in total transactions has constantly increased, which also contributes to the growth of the average apartment transaction price. Last year, the share of newly built apartments in total transactions was 29%. Newly built dwellings are about 30% more expensive than older apartments, on average.

Households' confidence in purchasing or building a home within the next 12 months fell sharply in the fourth quarter; however, this fall seems to be temporary as in the first quarter of this year confidence has slightly increased again. The reason behind this cautiousness of households may have come from the increased media coverage of such topics as a possible economic crisis and rise in interest rates. However, we do not expect an economic crisis in our outlook main scenarios; we also expect that the rise of interest rates should be slow.

In 2018, the number of building permits issued for dwellings was 30% lower due to the base effect of 2017, when the growth of building permits was very rapid (68%). Last year, there were 18% more dwellings built in Tallinn than a year earlier. Supply is still in a good balance with the demand.

This year, we expect slower net wage growth, while price growth will stay at around the same level as last year or somewhat slow and mortgage interest rates will remain at the same level or slightly increase. Thus, in 2019, housing affordability should stay at around the same level.

In 2018, the HAI improved considerably in **Riga**, including for new-project and renovated apartments, though the affordability level is lower for these apartments. Rapid average net wage growth, which outpaced the average apartment transaction price growth, was the defining factor behind higher affordability. The tightening labour market, labour tax reform, and minimum wage hike were the main reasons explaining the rapid growth. A minor decrease in mortgage interest rates also contributed to the index improvement.

The average apartment transaction price grew across all residential real estate segments. Activity in the market, as measured by the transaction count, was largely unchanged from a year ago. Activity and the average price growth in the Soviet-era apartment segment moderated after the strong demand and double-digit price growth in 2016 and the first half of 2017. Because of the earlier rapid price growth, the value-for-money perception of the Soviet-era apartments has, possibly, deteriorated. Nevertheless, the Soviet-era apartments continue to dominate real estate activity in Riga. Meanwhile, activity and the average price of new-project and renovated apartments in the suburbs continued to trend upwards on the back of firm demand and rising construction costs. However, price growth was moderate as demand was met with larger supply in the new-project apartment segment.

In 2019, we expect that the HAI (including for new-project and renovated apartments) will continue to improve, albeit in a slower pace. Wage growth is expected to slow as the effect from the labour tax reform and minimum wage hike dissipate, but the average apartment price will likely sustain a similar growth rate as in 2018. Interest rates are expected to stay at a similar level as in 2018 because they are already at historically low levels. Thus, interest rates will likely have a largely neutral effect on affordability.

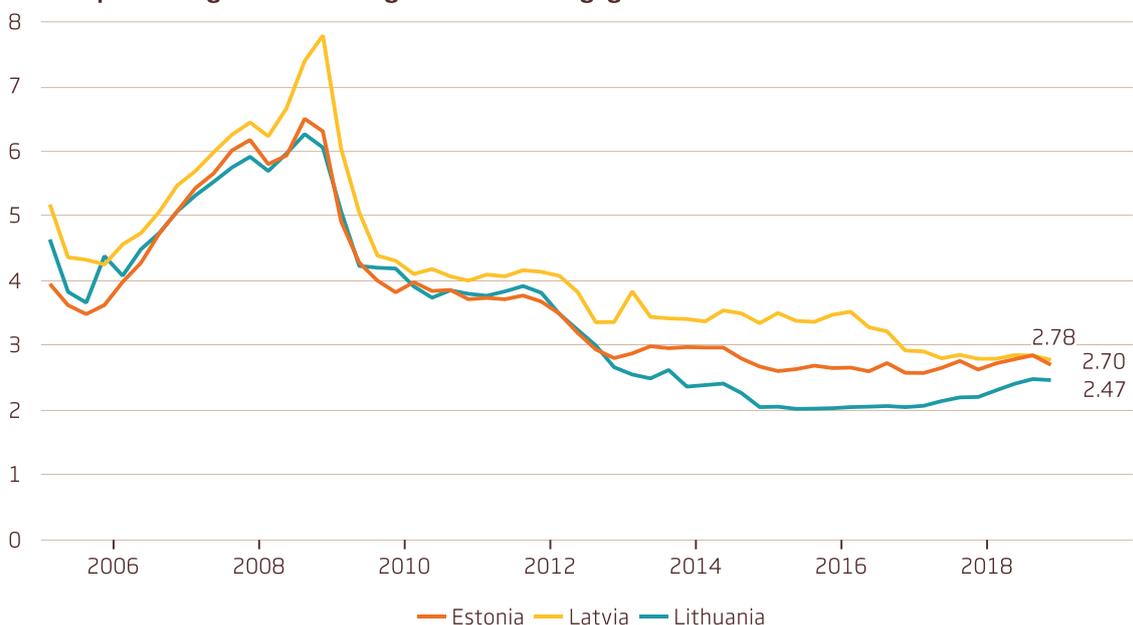
Supply and demand in the **Vilnius** residential real estate market seems to have been balanced overall. Prices inched up only 0.5% annually in the final quarter of the year. On the other hand, the number of transactions was up nearly 10%. The year 2018, overall, was very active for the Vilnius housing market, with a record-breaking 11,085 transactions surpassing the previous peak of 2007. Prices of new apartments declined 1.5% in the fourth quarter due to the large supply of freshly built apartments and, perhaps, a larger share of transactions in cheaper market segments.

Rapidly rising incomes and record-high consumer confidence are likely to keep the real estate market active in the nearest future, but we do not expect a sharp appreciation in apartment prices. Several factors are pulling prices in opposite directions. On the one hand, net wages will probably maintain double-digit growth rates due to labour taxation changes, and the demand for flats could be boosted by increasingly positive migration trends. On the other hand, the stock of unsold apartments is large, and it would take a considerable amount of increase in demand to push the prices of housing up. The number of construction permits issued for dwellings dropped towards the end the year. This could indicate that we are close to peak construction volumes. Prices of the average flat in Vilnius might increase, however, if the share of newly built apartments in the overall transaction structure rises. The share of newly built apartments was nearly 40% of all transactions, compared with just 32% two years ago; however, this is still below the 50% peak in the previous cycle. The increasing share of newly built apartments in total transactions will likely be the main force pushing prices up modestly, the composition of transactions will likely continue changing in favour of new flats as long as economic expansion continues.

### Interest rates on mortgages

In the fourth quarter of 2018, mortgage interest rates increased somewhat in Estonia and Lithuania while barely decreasing in Latvia compared to the same quarter in 2017. In Lithuania, interest rates increased the most, while remaining the lowest among the Baltic countries. The recent increase in mortgage interest rates in Lithuania is largely related to three factors: the introduction of the countercyclical capital buffer requirement on commercial banks by the Bank of Lithuania; the still-strong growth in demand for mortgages; and, possibly, more higher-risk borrowers. The six-month euro interbank offered rate (EURIBOR), which is most commonly used for mortgage interest rates, increased negligibly in the fourth quarter of 2018 from the same period in 2017; it was -0.25%.

Annual percentage rate of charge for new mortgages to households

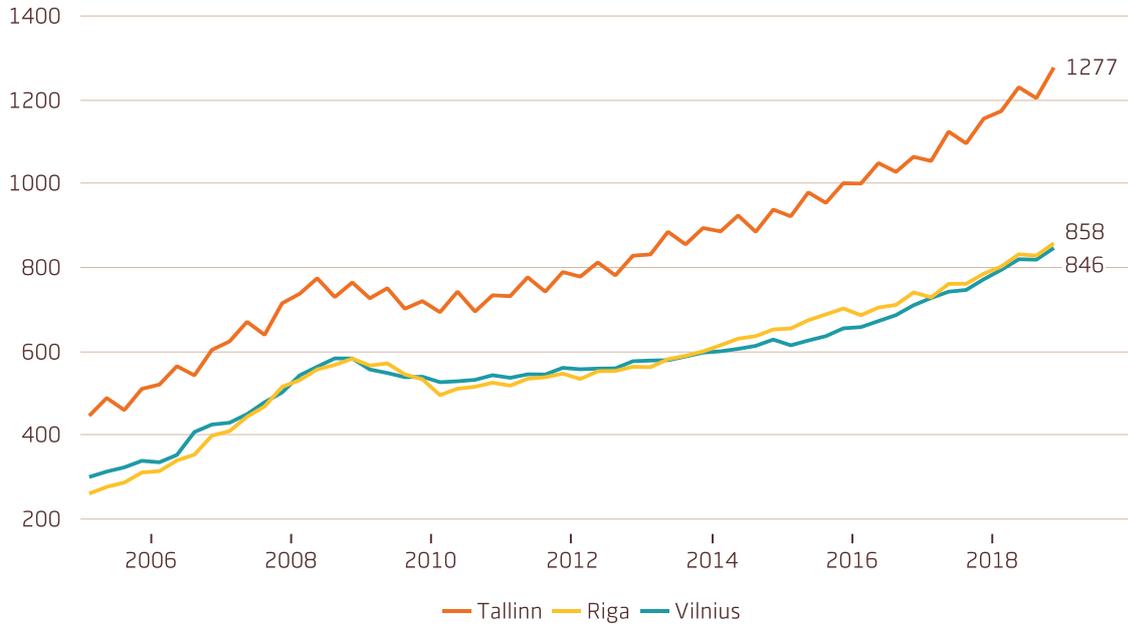


Sources: European Central Bank, Swedbank Research & Macrobond.

### Average monthly net wages

Annual average net wage growth in the Baltic capitals remained rapid in the fourth quarter of 2018, with growth rates around 9-10%. A labour market tightening, changes in labour tax codes, and minimum wage hikes were the main drivers of the rapid growth.

**Average monthly net wage, EUR**



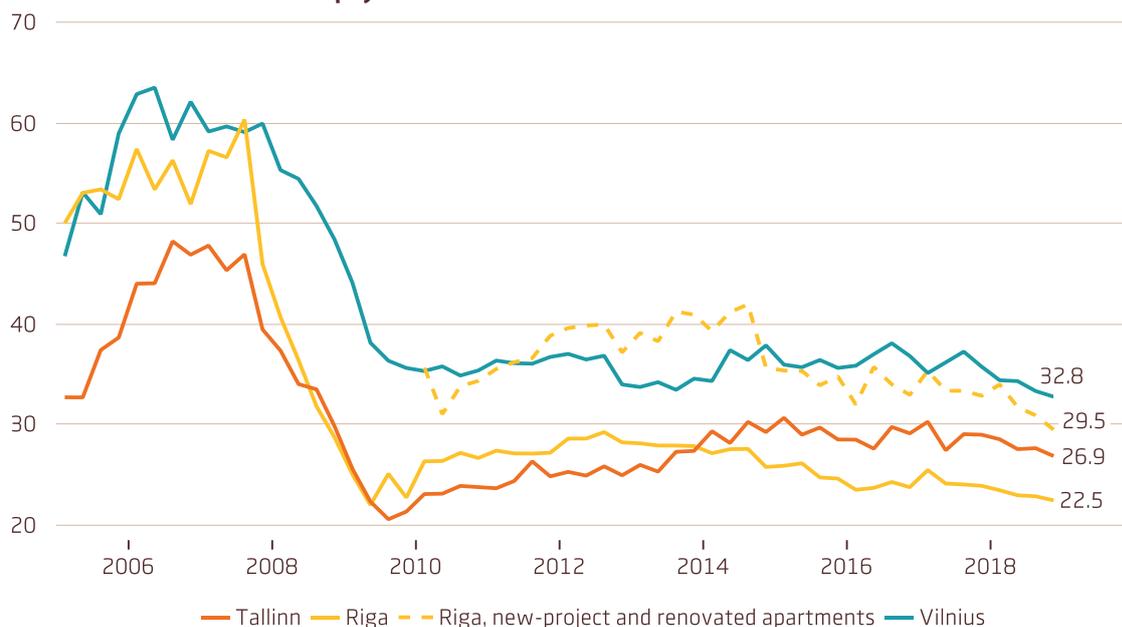
Sources: National statistics offices, Swedbank Research & Macrobond.

### Months to save for the down payment

The number of months needed to save for a down payment, which equals 15% of an apartment price, decreased in all Baltic capitals over the year. It decreased by two months in Tallinn, by one and a half months in Riga (three and a half for new-project and renovated apartments), and by three months in Vilnius, to 26.9, 22.5 (29.5), and 32.8 months, respectively. Growth in wages outpaced that in apartment prices, thus determining the decrease.

It is assumed that a household saves 30% of its net wage every month for a down payment.

#### Months to save for a down payment



Sources: Swedbank Research & Macrobond.

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#### Annual growth of the HAI indicators in the fourth quarter of 2018

	Tallinn, Estonia	Riga, Latvia	Riga, new-project and renovated apartments, Latvia	Vilnius, Lithuania
Average apartment transaction price, EUR/m <sup>2</sup> , %	2.4	2.7	-1.9	0.5
Annual percentage rate of charge for new mortgages to households, basis points	+7	-2		+26
Average monthly net wage, EUR, %	10.6	9.3		9.7
Months to save for a down payment, months	-2.1	-1.4	-3.4	-3.0

Sources: Swedbank Research & Macrobond.

## Baltic Housing Affordability Index: methodology

### Objective

The Baltic housing affordability index (HAI) measures the degree to which households can afford buying an apartment with a mortgage loan in the Baltic capitals.

### Norm (the main assumption)

Household monthly mortgage payments do not exceed 30% of household income.

### Variables

- ▶ Average apartment price per m<sup>2</sup>: three-month average apartment transaction price per m<sup>2</sup> in Baltic capitals.
- ▶ Household income: 1.5 of average monthly net wages in Baltic capitals.
- ▶ Mortgage interest rate: three-month average annual percentage rate of charge (including interest rate and other related charges) for new housing loans to households, issued in euros, in the Baltics.

### Other assumptions

- ▶ Average apartment size: 55 m<sup>2</sup>.
- ▶ Down payment: 15% of total apartment price.
- ▶ Term: 30 years.
- ▶ Saving rate for down payment: 30% of household income.

### Calculation of HAI

The HAI shows actual household income in relation to the income that meets the norm. Thus, if the HAI equals 100, a household uses 30% of its income to service mortgage payments. If the HAI exceeds 100, the household has higher income than required to satisfy the norm. And if the HAI is below 100, the household does not have sufficient income to fulfil the norm.

$$\text{HAI} = \frac{\text{AverageINC}}{\text{NINC}} \times 100 \text{ where } \text{NINC} = \frac{\text{PMT}}{30\%}$$

where AverageINC – household income; NINC – household income that satisfies the norm; and PMT – monthly mortgage payment.

### Limitations

The HAI provides an indication of the average household situation, not that of a particular household. Household income and mortgage interest rates faced by a particular household may differ from those presented in the report. The HAI accounts for mortgage costs but excludes taxes and subsidies, including property tax and interest deductions. It also does not take into account other household expenses that could have an effect on the household's ability to service mortgage payments, such as rent, lifestyle, or existing liabilities. The HAI does not provide any direct guidance for business decisions, including lending and interest rate decisions.

The average apartment price per m<sup>2</sup> reflects past transactions and does not necessarily indicate the potential affordability or price of apartments in the future. Differences in apartment segment structure and the physical condition of newly built apartments at the time of purchase might affect the comparability of the average apartment price per m<sup>2</sup> across the Baltic capitals.

The HAI is of an informative nature and reflects macroeconomic developments, rather than banks' decisions and lending policies or the potential behaviour of individual households.

### Frequency

Quarterly.

### Geography

Tallinn, Riga, Vilnius.

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