

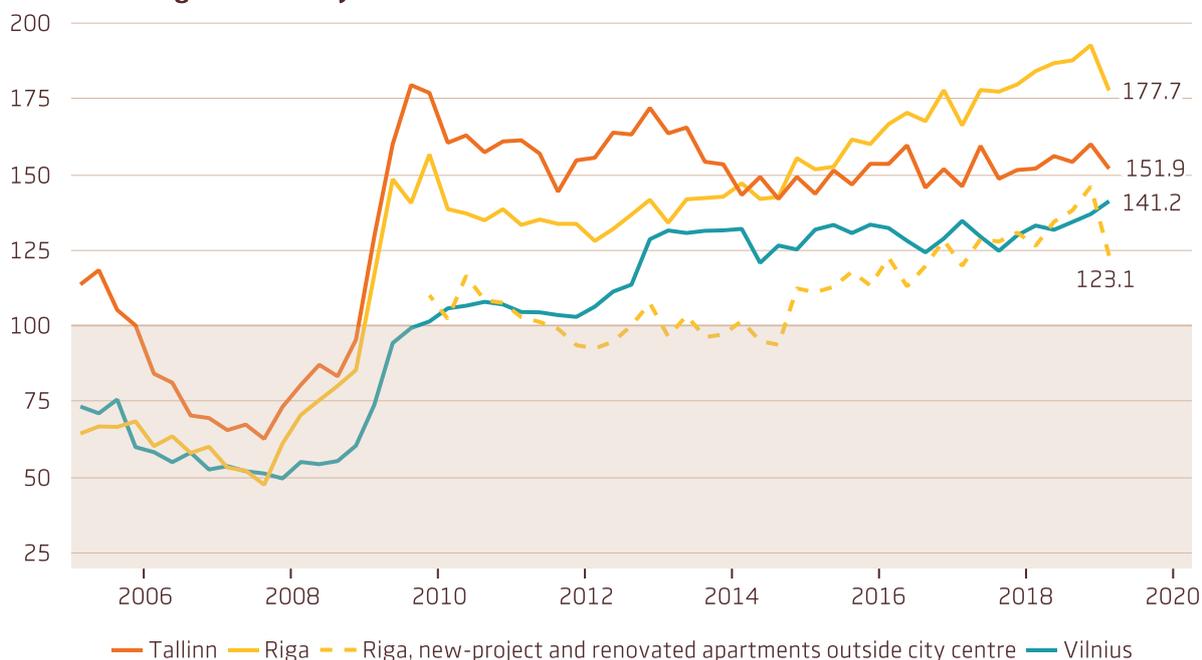
Baltic Housing Affordability Index

In Q1 2019, the housing affordability index (HAI) increased in Vilnius, stayed unchanged in Tallinn, but decreased in Riga

- ▶ In Tallinn, the HAI stayed almost unchanged (-0.1 point) at 151.9 in the first quarter of 2019, compared with the first quarter of 2018, as net wage growth was slightly slower than an increase in apartment prices and interest rates.
- ▶ In Riga, the HAI decreased by 6.4 points to 177.7 as robust net wage growth did not outweigh rapid apartment price growth and rising interest rates. For new-project and renovated apartments, the HAI decreased by 3.3 points to 123.1.
- ▶ In Vilnius, the HAI improved by 8 points to 141.2, thanks to a very strong net wage growth outpacing both apartment price and interest rate growth.

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 151.9 in Tallinn means that the net wages of a household in this city are 51.9% 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 77.7% higher (23.1% for new-project and renovated apartments) – and, in Vilnius, 41.2% higher – than required to fulfil the norm.

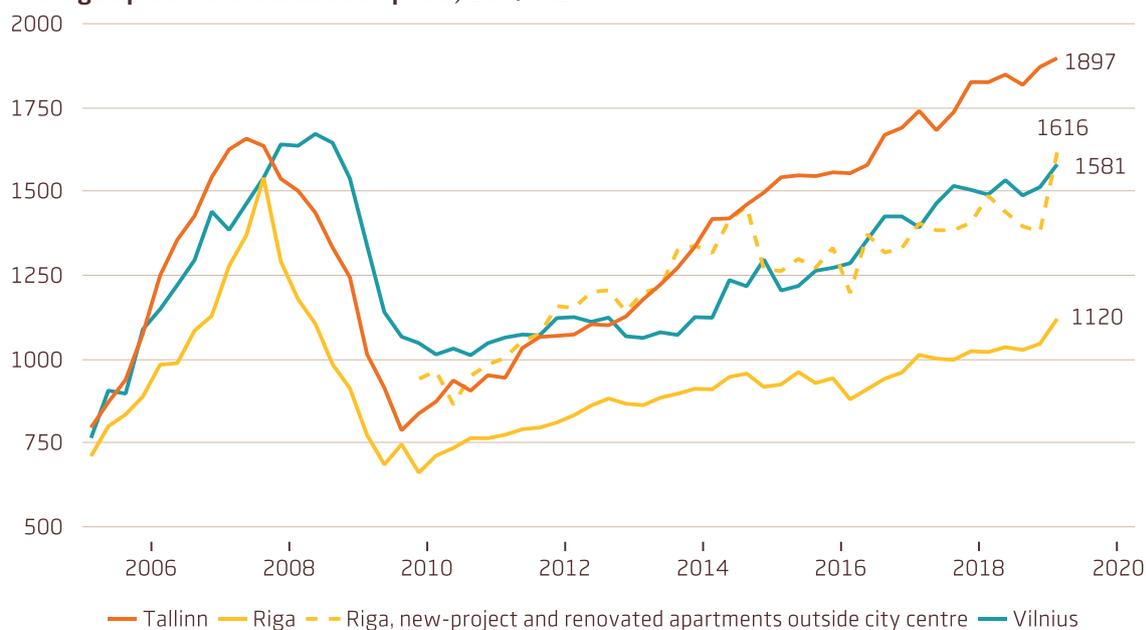
Please see an important methodology update on [page 6](#).

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

Average apartment prices

In the first quarter of 2019, annual average price growth picked up in all Baltic capitals. In Tallinn, the price growth picked up after a slowdown in the fourth quarter. A slightly larger share of newly built apartments than in the previous quarter contributed to the growth, as on average these apartments are about 30% more expensive than older ones. Sentiment indicators show that households' confidence in purchasing or building a home within the next 12 months slightly weakened again in the second quarter after recovering in the first. This year, we expect that housing affordability in Tallinn should stay at around the same level as last year. In Riga, the pickup in prices owes to faster price growth for the new-project and renovated apartments, as more expensive apartments were purchased in this apartment segment. Changes in transaction structure also played a role, as the share of more expensive apartments (e.g., new-project and renovated outside and in the city centre) gradually increased.

Average apartment transaction price, EUR/m²

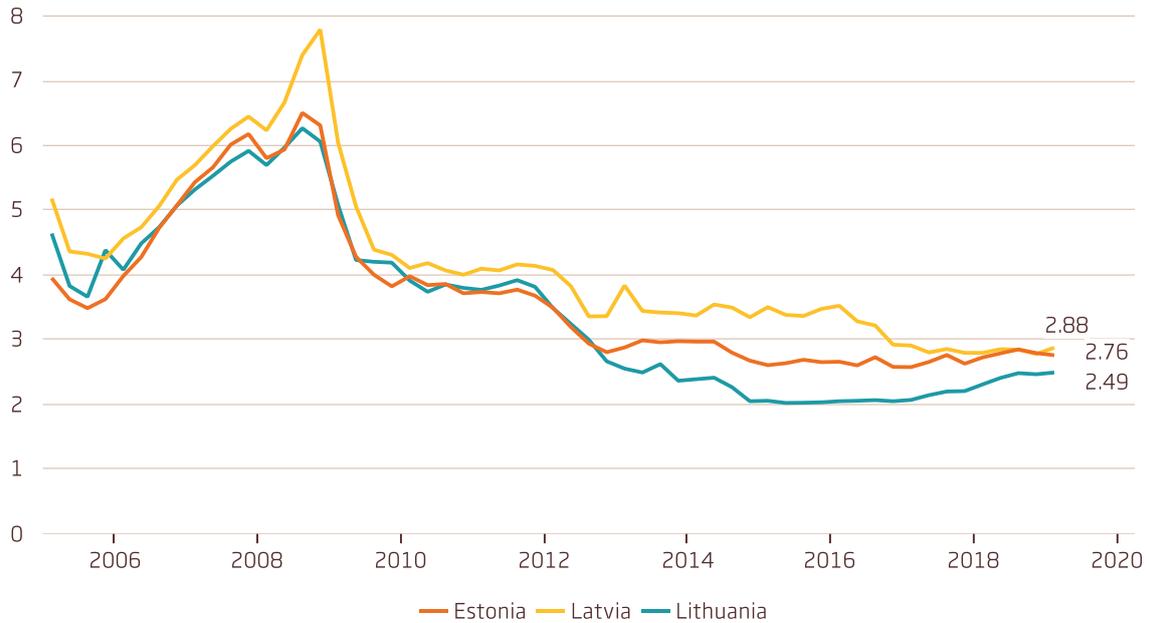


Sources: National land services and boards, Swedbank Research & Macrobond.

Interest rates on mortgages

In the first quarter of 2019, mortgage interest rates increased slightly in all Baltic capitals compared with the same quarter in 2018. In Latvia, the increase in mortgage interest rates is partly due to the introduction of stricter bank regulations. The six-month euro interbank offered rate (EURIBOR), which is most commonly used for mortgage interest rates, increased by 4 basis points in the first quarter of 2019 from the same period in 2018, moving to -0.23%.

Annual percentage rate of charge for new mortgages to households

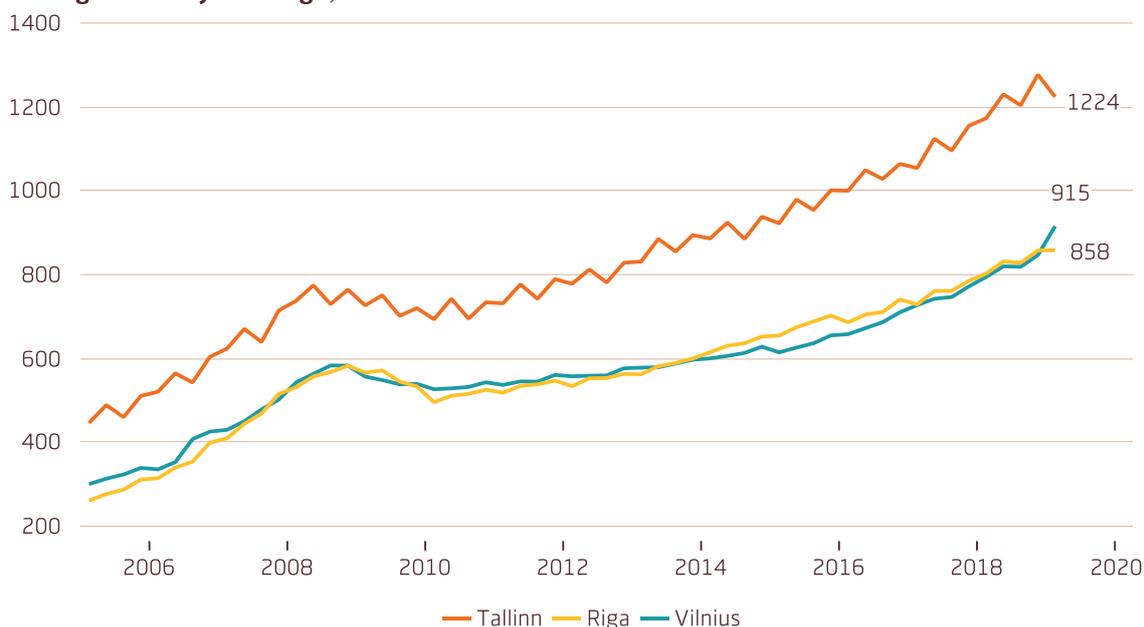


Sources: European Central Bank, Swedbank Research & Macrobond.

Average monthly net wages

Annual average net wage growth moderated in Tallinn and remained rapid in Riga, while accelerating in Vilnius in the first quarter of 2019. In Tallinn and, especially Riga, a labour market tightening and minor changes to the labour tax code sustained wage growth at a rather rapid level. However, the growth rates in both capitals were lower than the year before, as the effect from the 2018 personal income tax reform, including a steep minimum wage hike in Latvia, dissipated. In Vilnius, the average net wage surged, growing by more than 15% over the year thanks to a tax reform. This reform raised incomes through three channels: by reducing the social security contributions rate, expanding the base of nontaxable income, and adding an option to transfer a part of the wage to the individual's pension fund. The actual increase in households' purchasing power and housing affordability may be smaller than it looks on paper, though, as a large share of employees chose to voluntarily top up their pension funds, not to spend their tax windfall.

Average monthly net wage, EUR



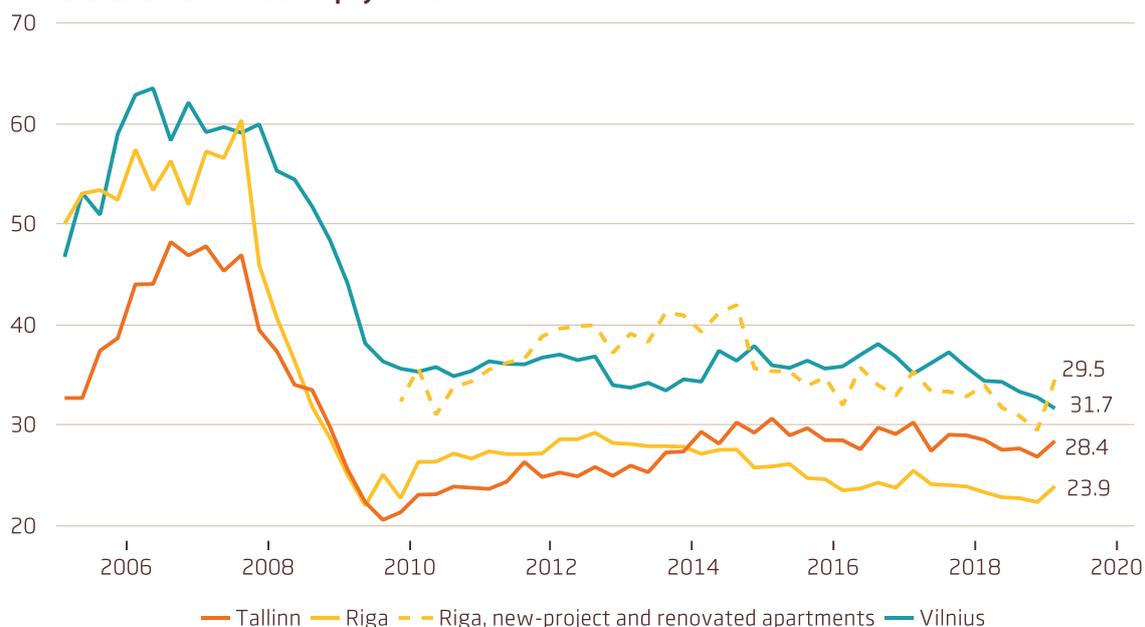
Sources: National statistics offices, Swedbank Research & Macrobond.

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, remained largely unchanged in Tallinn, increased in Riga, but decreased in Vilnius. In Tallinn, it was 28.4 months. In Riga, it was 23.9 months (34.5 months for new-project and renovated apartments) – an increase of two weeks in both cases. In Vilnius, it was 31.7 months, a decrease of two-and-a-half months.

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 first quarter of 2019

	Tallinn, Estonia	Riga, Latvia	Riga, new-project and renovated apartments, Latvia	Vilnius, Lithuania
Average apartment transaction price, EUR/m ² , %	3.9	9.7	8.7	6.1
Annual percentage rate of charge for new mortgages to households, basis points	+3	+8		+18
Average monthly net wage, EUR, %	4.3	7.0		15.2
Months to save for a down payment, months	-0.1	0.6	0.5	-2.7

Sources: Swedbank Research & Macrobond.

Baltic Housing Affordability Index: methodology

Methodology update

An additional index for assessing housing affordability in **Riga** has been introduced in the report since the fourth quarter of 2018. The new index is called *HAI, new-project and renovated apartments*. It represents housing affordability in newly-built and renovated apartments after 2000 outside the city centre, a specific market segment. All variables and assumptions except for the average apartment transaction price remain the same. That is for the calculation of *HAI, new-project and renovated apartments*, the average apartment transaction price of newly built and renovated apartments after 2000 outside the city centre is used.

The *HAI, new-project and renovated apartments* has been introduced to enhance comparability of housing affordability across the Baltic capitals. In Riga, apartments built before 2000 outside the city centre (mostly Soviet era) dominate the market transactions, representing as much as two-thirds of all transactions. Meanwhile, apartments built or renovated after 2000 in the same location make up only around 15% of transactions. The price level of the older apartments can be as much as two times lower than their newer counterparts. The differences in Tallinn or Vilnius between different apartment segments are less apparent. This difference is also reflected in the age of housing stock: according to Eurostat 2011 data, only 6.1% of the housing stock in Riga was built after 2000, compared with 15.2% in Tallinn and 12.6% in Vilnius.

While the headline index continues to reflect the overall housing affordability in Riga, one must consider that the higher affordability in Riga is partly explained by the fact that transactions there involve relatively older and cheaper apartments than do transactions in Tallinn and Vilnius. Thus, the new index for Riga intends to improve the comparability of affordability levels across the three capitals, because it considers new-project and renovated apartments – type of apartments more commonly purchased in Tallinn and Vilnius.

For readers' convenience, the new index and associated apartment price variable are represented by a yellow dashed line in the graphs of the report.

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 m²: three-month average apartment transaction price per m² 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 m².
- ▶ 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 consider other household expenses that could affect 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 m² 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 m² 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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