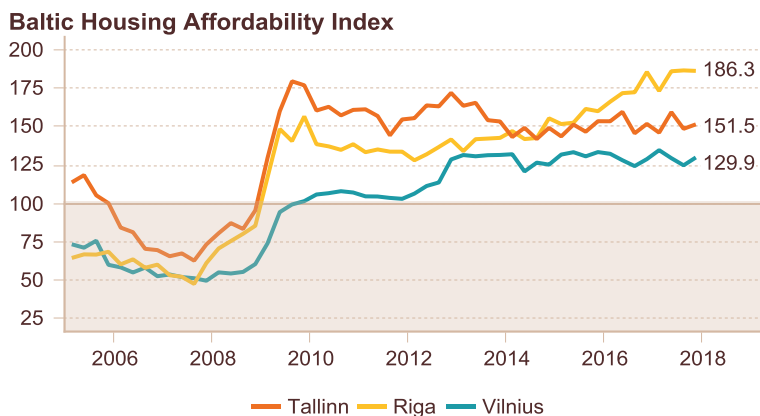


# Baltic Housing Affordability Index

**The housing affordability index (HAI) increased to 186.3 in Riga, and 129.9 in Vilnius, but decreased to 151.5 in Tallinn,**

- In Tallinn, affordability decreased slightly by 0.3 point in the fourth quarter of 2017, compared with the same period in 2016, as rapid wage growth did not outweigh robust apartment price growth and an increase in interest rates.
- In Riga, the HAI rose marginally by 0.7 point as wage growth and a continuous decrease in interest rates counterbalanced apartment price growth.
- In Vilnius, the HAI improved by 1.1 points as swift wage growth offset apartment price growth and an increase in interest rates.
- The time needed to save for a down payment decreased by around a month in Vilnius and by a couple of days in Tallinn, to 35.7 and 29.0 weeks, respectively, while increasing in Riga by around a week, to 23.1 weeks.

*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 number, the greater the affordability.*



Source: Swedbank Research & Macrobond



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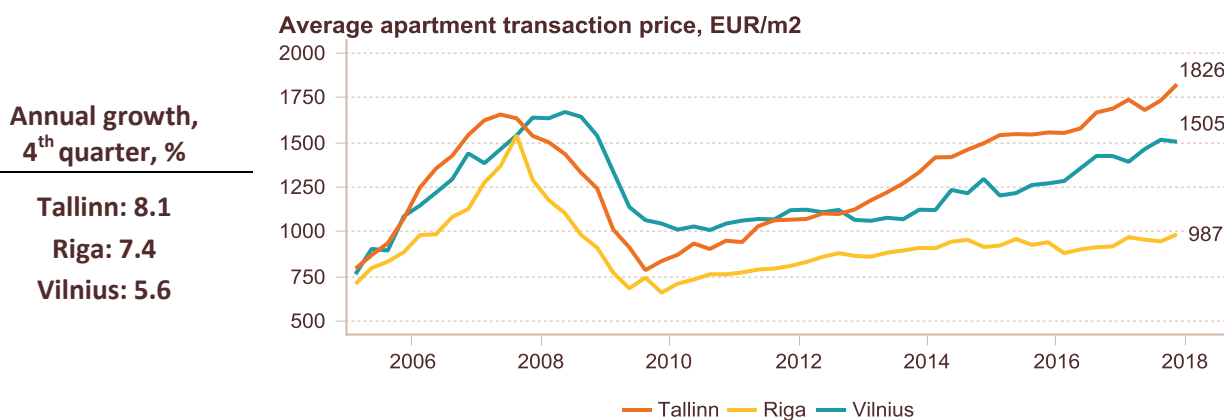
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## Components of HAI: apartment prices, interest rates, and wages

### Apartment prices

Annual apartment price growth in the fourth quarter of 2017 gained pace in Tallinn and Riga while moderating in Vilnius. In 2017, apartment prices grew faster in Tallinn than in the other Baltic capitals.



Source: National land boards and services, Swedbank

Annual growth,  
4<sup>th</sup> quarter, %

Tallinn: 8.1

Riga: 7.4

Vilnius: 5.6

In 2017, the residential real estate market became more active in **Tallinn** – the number of transactions increased 6.6% year on year (yoy) to 9,759, and the average price per square meter grew by 7.6%. The increased share of new buildings in residential real estate market has contributed to the accelerated growth of prices. In 2017, around 44% of all transactions involving residential real estate were made in Tallinn. The last quarter of the year was very active, as well – the growth in the number of transactions accelerated to 6.9% yoy, whereas average price growth was 8.1% yoy and reached EUR 1,826/m<sup>2</sup>. The price of newly built rooms was EUR 2,194/m<sup>2</sup>, i.e., 20% higher than the average. In Tallinn, 2,693 residential real estate transactions were made in the fourth quarter, and the share of new rooms was roughly one-third. The total value of transactions involving residential real estate increased 17.6% in the last quarter of the year.

Last year, 2,732 new buildings were completed in Tallinn, 21% more than the year before. In 2018, the residential real estate market is expected to remain active; last year, 4,005 building permits for residential buildings (rooms) were given, and the construction of 1,573 new rooms began in the second half of 2017. The strong activity has increased cost pressures in the construction of both buildings and structures - construction prices are rising, and we expect that the trend is upwards, at least in the near future. At the same time, demand is expected to remain robust. Households' confidence in purchasing or building a home within the next 12 months has risen and is still at a high level. We expect that, due to the changes in the income tax system, real growth of net wages will pick up this year and will raise purchase power. Although this effect should primarily contribute to household consumption, this should also have a positive impact on demand in real estate.

In 2017, the residential real estate market in **Riga** was stable. The average apartment transaction price growth caught up with the average nominal net wage growth and was 6.8% on an annual basis. Meanwhile, activity declined negligibly – by 1.7%. Prices grew across all main segments. The continuous growth in demand kept price growth elevated in the Soviet-era apartments. Prices also inched up in the new-project economic segment, due to rises in construction costs and changes in apartment supply (the cheap apartments that were available in 2016 have been sold). Activity, however, slipped slightly. In the wake of rising apartment prices, some potential buyers prefer purchasing private land or a house. In 2017, the number of transactions involving private land and houses, which are not measured by the index, increased by 25%. Although growing demand and rising construction costs will exert an upward pressure on prices going forward, stiffer competition among developers and the thriving supply of apartments could somewhat limit price growth. With residential real estate markets approaching saturation in Tallinn and Vilnius, more developers from Estonia and Lithuania are entering the Latvian market. Because of this influx, along with the greater activity of domestic developers, the supply of apartments in the new-project economic segment currently equals 3.5 years of sales, an increase from the 2.0 years of sales of just a year ago.

Although apartment prices and wages grew in tandem in Riga, a further decrease of mortgage interest rates sent the HAI to a new high in 2017. Yet, faster price growth translated into a slower index improvement than before. Strong economic growth, the tightening labour market, robust consumer confidence, and ample wage growth (in part due

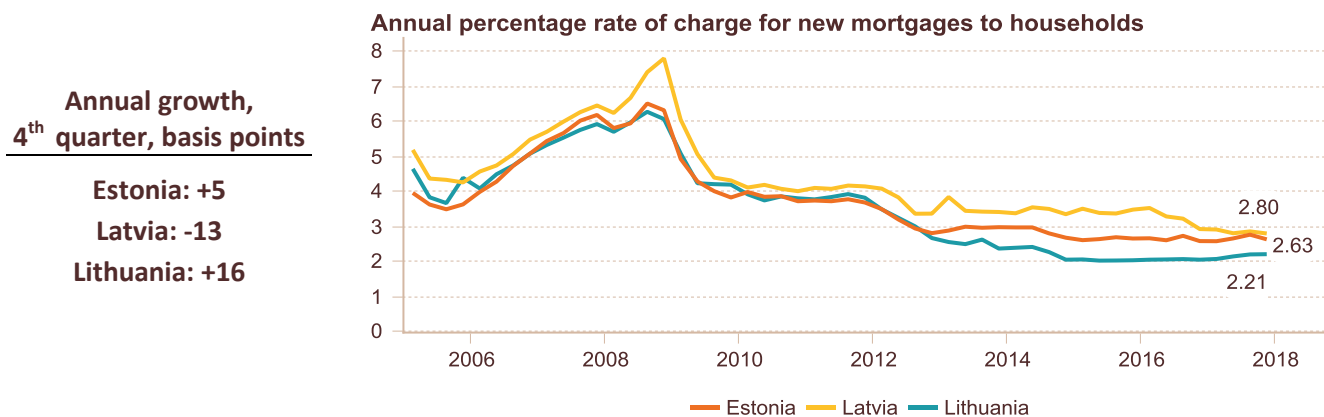
to tax reform) all point to improving demand for housing in 2018. The ECB bank lending survey shows that banks expect an increase in demand for mortgages and intend to lower credit standards for them as economic conditions improve and competition among banks stiffens. Overall, strong wage growth and, possibly, lower mortgage interest rates could lift affordability, but price growth could restrain it, especially if construction activity, both residential and nonresidential, remains elevated.

The residential real estate market in **Vilnius** went through a slowdown last year. The number of transactions declined by 3%, compared with the previous year, with the negative developments accelerating towards the end of the year. The decline is likely related to the increasing saturation of the market and the diminishing attractiveness of buy-to-let as an investment option as the end of ultra-loose monetary policy draws closer. The sales of new apartments fared better last year, increasing by 6.5%; however, annual growth was decelerating gradually throughout the whole year and the number of sales declined in annual terms by 16.2% in the last quarter of 2017. After excessive growth in 2015-2016, the decline in the number of deals is a sign of normalisation in the Vilnius residential real estate market; it should be noted that these developments are largely limited to Vilnius.

In Vilnius last year, the decline in demand for apartments and increased supply of new apartments resulted in a rising stock of unsold new apartments and, thus, a gradually decelerating growth in apartment prices. We will continue to see a buyer's market this year, as some developers may be willing to reduce their apartment stock and, thus, may be more flexible in their pricing strategies. Meanwhile, more established developers may face less pressure to lower their profit margins and could choose to wait for the supply to normalise. The supply-side adjustment may already be taking place – last year the number of completed apartments in Vilnius was 28% lower than a year ago. In addition, developers may feel less pressured to lower prices as the EU funds are starting to flow again and public orders for construction of civil engineering structures are picking up. Thus, despite the widening imbalances between supply and demand, we do not expect a major downward correction in apartment prices – they are expected to grow, but at a pace below that of wages. These trends will be supportive of high housing affordability.

### Interest rates on mortgages

Mortgage interest rates increased slightly over the year in Estonia and Lithuania; meanwhile, in Latvia, interest rates continued to decline. The six-month euro interbank offered rate (EURIBOR), which is most commonly used for mortgage interest rates, fell from -0.21% in the fourth quarter of 2016 to -0.27% in the fourth quarter of 2017.



Source: Swedbank Research & Macrobond

**Annual growth,  
4<sup>th</sup> quarter, basis points**

**Estonia: +5**  
**Latvia: -13**  
**Lithuania: +16**

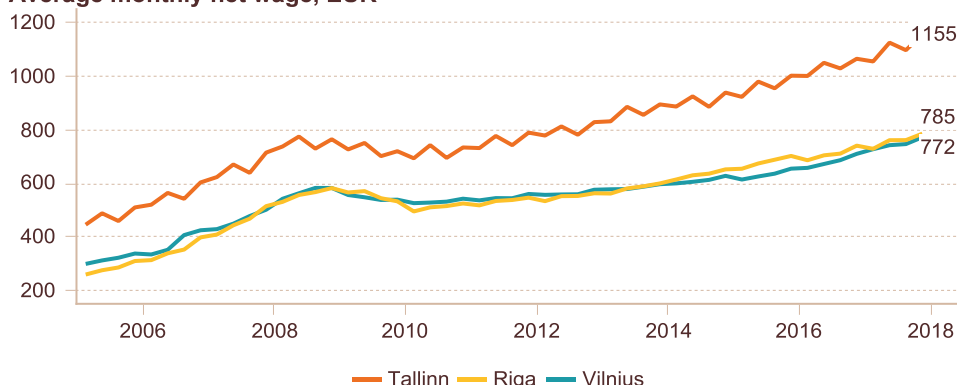
**Average net wages**

In the fourth quarter of 2017, annual average net wage growth accelerated in Tallinn, kept a similar pace as in the previous quarter in Vilnius, but calmed in Riga. In 2017, average net wages grew faster in Vilnius than in the other Baltic capitals.

**Average monthly net wage, EUR**

**Annual growth,  
4<sup>th</sup> quarter, %**

**Tallinn: 8.6  
Riga: 6.0  
Vilnius: 8.7**



Source: Swedbank Research & Macrobond

The HAI value of 151.5 in Tallinn means that the net wages of a household in this city are 51.5% 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 86.3% higher — and, in Vilnius, 29.9% higher — than required to fulfill the norm.

**Months to save for the down payment**

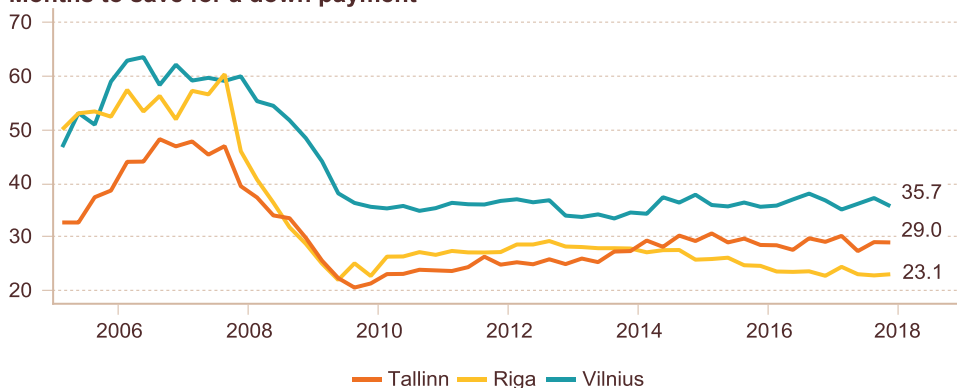
The number of months needed to save for a down payment, which equals 15% of an apartment price, decreased in Vilnius and in Tallinn (much less so in the latter) while it increased in Riga. The decrease in Vilnius and Tallinn stems from wage growth's outpacing apartment price growth, while the opposite effect determined the increase in Riga.

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**

**Annual growth,  
4<sup>th</sup> quarter, months**

**Tallinn: -0.1  
Riga: 0.3  
Vilnius: -1.1**



Source: Swedbank Research & Macrobond

**Housing affordability index: method**

**Purpose** Measure changes in household buying power, primarily as this relates to apartment purchases, but also act as an indicator for existing housing.

**Norm** Household mortgage costs, according to our definition, should not exceed 30% of net wages of a household.

**Definition of housing affordability index** Actual income in relation to income required to meet the "norm," where mortgage costs account for 30% of net wages of a household. If the index = 100, households are using 30% of their net wages. If the index > 100, household buying power exceeds the norm. And if the index < 100, household buying power is below the norm. The index is calculated according to the following formula:

$$HAI = \frac{AverageINC}{NINC} * 100$$

where

$$NINC = \frac{PMT}{30\%}$$

*HAI* – housing affordability index  
*AverageINC* – 1.5 of average monthly net wages  
*NINC* – net wages that would satisfy the "norm"  
*PMT* – monthly mortgage payment

**Variables**

- Three-month average prices of apartments of average size (55 sq. m.) in capital cities.
- Average net wages of a household, equal to 1.5 of average monthly net wages in capital cities.
- Three-month average interest rates and other related charges (or annual percentage rate of charge - a rate that comprises an interest component and a component of other charges) for new housing loans to households issued in euros -- produce the monthly mortgage cost, assuming a 15% down payment and 30-year term.

**Limits** The housing affordability index includes mortgage costs but excludes taxes and subsidies, including property tax and interest deductions. The index provides an indication of the situation for households composed of one or two working people who, combined, earn one-and-a-half times the average monthly wage; however, it does not reflect conditions for individual households. The index does not provide any direct guidance for business decisions, including lending and interest rate decisions. It reflects household buying power, based on apartment purchases that have been made, but says nothing about opportunities for apartment sales.

The housing affordability index is of an informative nature and reflects macroeconomic developments, rather than banks' decisions and lending policies or possible decisions made by individual households.

**Periodicity** Quarterly

**Geography** Tallinn, Riga, Vilnius

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