

20 December, 2016

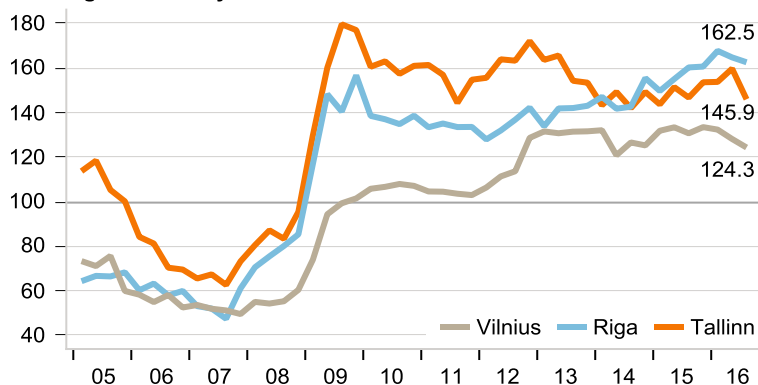
## Baltic Housing Affordability Index

**The housing affordability index (HAI) increased to 162.5 in Riga, but decreased to 145.9 in Tallinn and to 124.3 in Vilnius**

- In Tallinn, affordability decreased by 0.8 point in the third quarter this year compared with the same period in 2015, due to a slight increase in interest rates as price growth was equal to wage growth.
- In Riga, the HAI increased by 2.3 points as meagre wage growth was compensated for by 15-basis-points lower interest rates
- In Vilnius, the HAI declined by 6.4 points because apartment price growth continued to outpace wage growth.
- The time needed to save for a down payment almost did not change in Tallinn and Riga, where it was at 29.7 months and 25.0 months, respectively; it increased by 1 month and 3 weeks, to 38.1, in Vilnius.

*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.*

**Housing affordability index**



Source: Swedbank Research & Macrobond



Vaiva Šečkutė  
+370 2 582 156;  
[Vaiva.Seckute@swedbank.lt](mailto:Vaiva.Seckute@swedbank.lt)

Linda Vildava  
+371 67 444 213;  
[Linda.Vildava@swedbank.lv](mailto:Linda.Vildava@swedbank.lv)

Siim Isküll  
+372 8887925;  
[Siim.Iskull@swedbank.ee](mailto:Siim.Iskull@swedbank.ee)

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

### Apartment prices and real estate market developments

Apartment price growth in Tallinn accelerated to the same pace as wage growth. Price growth in Vilnius remains elevated due to stronger price growth of new apartments. As prices across all segments grew, average apartment price growth picked up in Riga.

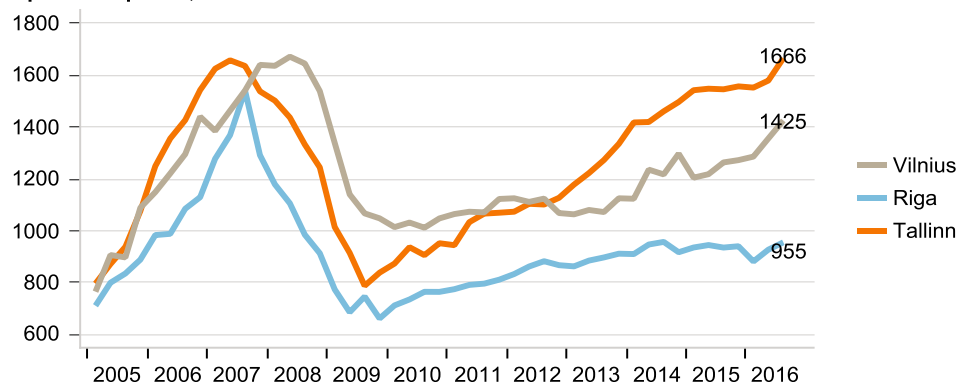
Annual growth, 3<sup>rd</sup>  
quarter, %

Tallinn: 7.8

Riga: 2.2

Vilnius: 12.8

Apartment prices, EUR/m<sup>2</sup>



Source: Estonian Land Board, Latvian State Lands Service, Lithuanian Centre of Registers

The housing market in **Tallinn** picked up some steam in the second and third quarters as the annual growth of average prices accelerated from 0.7% in the first to 7.8% in the third quarter. Market activity remains elevated at around 2,300 deals per quarter. Despite the recent spike in real estate prices, the housing market in general can still be considered stable. During the 2007 real estate boom, around 3,000-3,500 deals were made each quarter, and the market was substantially more active. Whereas the nominal price of a square meter has now exceeded the price level of 2007, prices relative to net wages remain significantly lower. The construction sector suggests that supply and demand will be more balanced in the future. The growth of new apartments in stock seems to have eased somewhat, and the number of new apartment constructions started has been decreasing for two quarters in a row. The main driver for price growth is the continuing fast increase in net wages, 7.8% in the third quarter, and strong consumer confidence. This is contributing to increasing demand but is counterbalanced by supply as well. The number of issued use permits will remain high for some time as the very large number of construction projects started in the beginning of this year are due to be finished in the following quarters. The annual growth in the stock of housing loans has also accelerated and reached 5% in October. Next year, we expect a sharp deceleration of real net wage growth, and this should also have a stabilising effect on the real estate market.

The residential real estate market in **Riga** remained stable in the third quarter as average apartment prices grew by 2.2% and activity increased by 2.4% on an annual basis. Price growth was broad based. It accelerated in the Soviet-era apartments, reflecting steady demand in this category, as well as in the city-centre apartments, as nonresident activity is stabilising. However, activity remains mainly resident driven, partially supported by the state-guaranteed mortgage loan programme for families with children. While the residential real estate market in the economic price class segment can be regarded as balanced, the exclusive-apartment segment is saturated, given the current demand. The supply of apartments in the economic segment equals two years of sales for the current activity level. However, some projects are booked even before the end of the construction process, indicating a lack of affordable-quality apartments. On the contrary, the available stock of apartments in the exclusive-apartment segment compares to eight years of sales. As to demand, there is potential for growth, but the modest economic and wage growth, as well as the political landscape, is eating into household confidence. While new mortgage lending grew by 23% annually, reaching one of the highest levels in the past couple of years, the household loan stock still remains 2.7% lower than a year ago and household deposit stock growth continues at a high pace (7% year on year in the third quarter), suggesting there is borrowing potential. Next year, we expect economic growth to pick up, employment to steadily increase, annual nominal net wage growth to return to around 5%, and interest rates to remain low, which could be positive signs for household activity. Overall the general

outlook for 2017 remains balanced, as quite a few projects are expected to enter the market in the coming years.

Annual apartment price growth in **Vilnius** has been outpacing wage growth for two quarters now. Activity growth also accelerated further in the third quarter, to 17% annual growth. However, activity and price trends in the old- and new-apartment segments diverged, with the latter showing a much steeper trend. Activity has not been growing in the old-apartment segment, and price growth in that segment has been much more in line with net wage growth. Activity in the new-apartment segment is growing rapidly, but from very low levels, which this year are still one-third lower than the peak in 2007. However, the price of new apartments is only 8% below its peak. Nevertheless, the price level can be lifted by a relatively small number of sales of some exceptionally expensive apartments. According to real estate agencies, the supply of luxury-housing apartments has increased recently, and their prices rose faster than other segments' this year. Therefore, the price jump in September, when the average price of new apartments surpassed the pre-crisis level, might be an outlier due to the transactions in the luxury-housing segment. Housing affordability has been decreasing for three quarters now; however, it remains at an historically high level, as on average during the last six years price growth did not diverge significantly from wage growth and interest rates remain at historically low levels. Moreover, the number of employed in Vilnius has been hitting record highs since 2015. This suggests that real estate most likely is not overvalued. However, the low-interest-rate environment poses some risks. Rent yield fell marginally below its average at the end of this year. However, low interest rates still mean that real estate is an attractive investment and more favourable than the alternative of renting. Continued double-digit price growth will not be sustainable; however, we believe that the risks in the real estate market are limited by the macroprudential policy tools of the Lithuanian central bank, more moderate expectations and less likely spikes in demand. Moreover, building permits data also suggest that supply will not fall behind rising demand. The risks of unsustainable price growth for macroeconomic stability are also limited by the high liquidity and capital adequacy of the banking sector and lower financial leverage in the private sector.

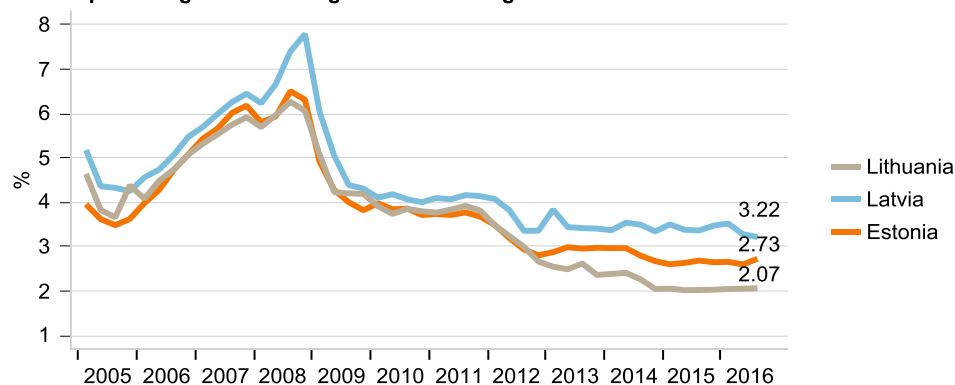
### Interest rates on mortgages

In Lithuania and Estonia, mortgage interest rates almost did not change for a year, but they decreased by 15 basis points in Latvia. The six-month euro interbank offered rate (Euribor), which is most commonly used for mortgage interest rates, decreased from 0.04% in the third quarter of 2015 to -0.19% in the third quarter of this year.

#### Annual growth, 3<sup>rd</sup> quarter, basis points

**Estonia: +4**  
**Latvia: -15**  
**Lithuania: +4**

Annual percentage rate of charge for new mortgages to households



Source: European Central Bank

### Average net wages

Annual wage growth remained rapid in Tallinn and Vilnius but slowed further in Riga. Weak economic growth and issues in individual industries (e.g., construction and transit) owes to the slowing wage growth rate.

## Macro Research - Baltic Housing Affordability Index

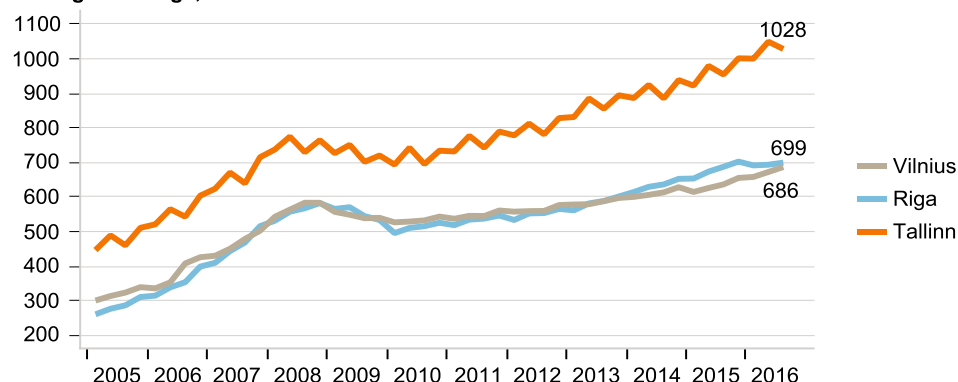
### Annual growth, 3<sup>rd</sup> quarter, %

Tallinn: 7.8

Riga: 1.7

Vilnius: 7.8

### Average net wage, EUR



Sources: National statistical departments

The HAI value of 145.9 in Tallinn means that household net wages in this city are 45.9% higher than required to afford an apartment, according to our norm (mortgage costs account for 30% of net wages of a household that earns 1.5 of the average net wage). In Riga, meanwhile, household net wages are 62.5% higher – and, in Vilnius, 24.3% higher – than required to fulfil this norm.

### Months to save for the down payment

Over the past year, the number of months needed to save for a down payment, which equals 15% of an apartment price, increased in Vilnius due to rapid apartment price growth; the number almost did not change in Tallinn and Riga, where there was less divergence between price and wage growth.

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

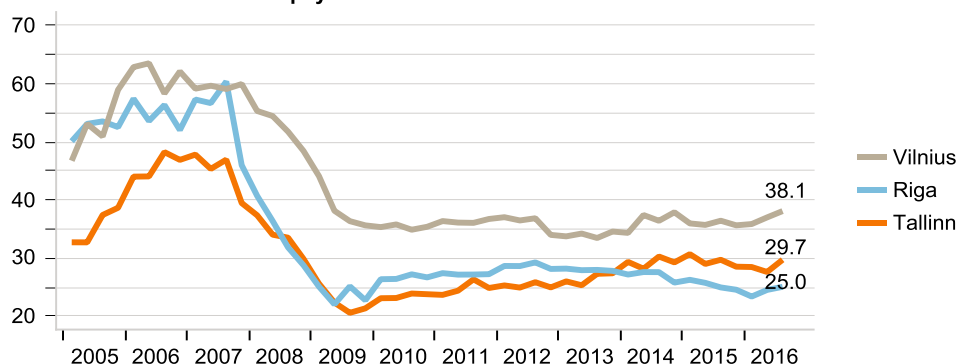
### Annual growth, 3<sup>rd</sup> quarter, months

Tallinn: 0.0

Riga: 0.1

Vilnius: 1.7

### Months to save for a down payment

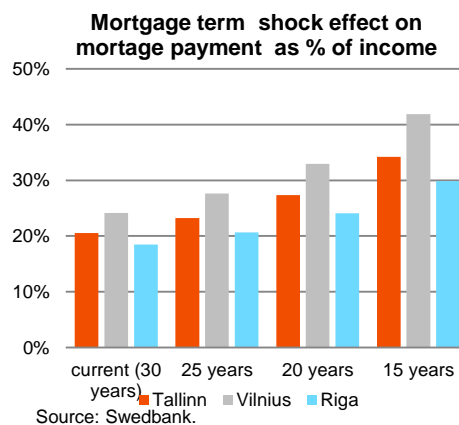
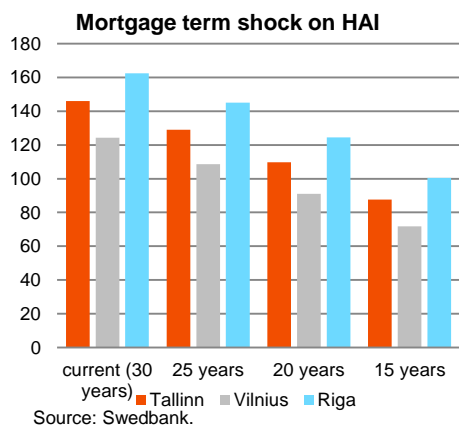
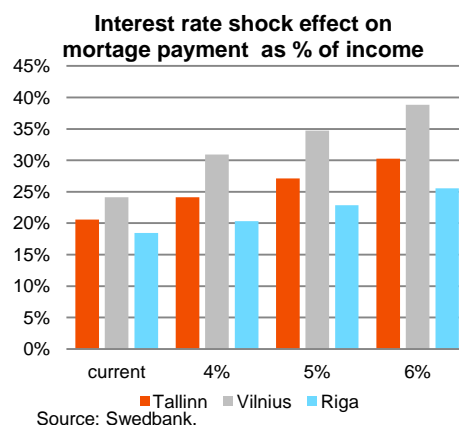
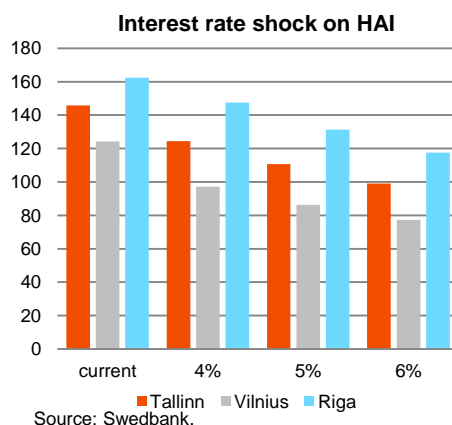


Sources: National statistical departments, Lithuanian Centre of Registers, Latvian State Land Service and National Real Estate Cadastre, Estonian Land Board and Swedbank

### Sensitivity analysis

Sensitivity analysis shows that, if interest rates rose to 4%, apartments would become unaffordable in Vilnius, as households would have to spend 31% of their income on a mortgage payment. Meanwhile, in Riga, apartments would still be affordable if the mortgage term would decrease by half, as the mortgage payment would not breach the 30% limit.

# Macro Research - Baltic Housing Affordability Index



## 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** Vilnius, Riga, Tallinn



## General disclaimer

This research report has been prepared by analysts of Swedbank Large Corporates & Institutions' Macro Research department. The Macro Research department consists of research units in Estonia, Latvia, Lithuania, Norway and Sweden, and is responsible for preparing reports on global and home market economic developments.

## Analyst's certification

The analyst(s) responsible for the content of this report hereby confirm that notwithstanding the existence of any such potential conflicts of interest referred to herein, the views expressed in this report accurately reflect their personal and professional views.

Research reports are independent and based solely on publicly available information.

## Issuer, distribution &amp; recipients

This report by Swedbank Large Corporates & Institutions Macro Research department is issued by the Swedbank Large Corporates & Institutions business area within Swedbank AB (publ) ("Swedbank"). Swedbank is under the supervision of the Swedish Financial Supervisory Authority (Finansinspektionen).

In no instance is this report altered by the distributor before distribution.

In Finland this report is distributed by Swedbank's branch in Helsinki, which is under the supervision of the Finnish Financial Supervisory Authority (Finanssivalvonta).

In Norway this report is distributed by Swedbank's branch in Oslo, which is under the supervision of the Financial Supervisory Authority of Norway (Finanstilsynet).

In Estonia this report is distributed by Swedbank AS, which is under the supervision of the Estonian Financial Supervisory Authority (Finantsinspeksioon).

In Lithuania this report is distributed by "Swedbank" AB, which is under the supervision of the Central Bank of the Republic of Lithuania (Lietuvos bankas).

In Latvia this report is distributed by Swedbank AS, which is under the supervision of The Financial and Capital Market Commission (Finanšu un kapitāla tirgus komisija).

In the United States this report is distributed by Swedbank First Securities LLC ('Swedbank First'), which accepts responsibility for its contents. This report is for distribution only to institutional investors. Any United States institutional investor receiving the report, who wishes to effect a transaction in any security based on the view in this document, should do so only through Swedbank First. Swedbank First is a U.S. broker-dealer, registered with the Securities and Exchange Commission, and is a member of the Financial Industry Regulatory Authority. Swedbank First is part of Swedbank Group.

For important U.S. disclosures, please reference: <http://www.swedbankfs.com/disclaimer/index.htm>

In the United Kingdom this communication is for distribution only to and directed only at "relevant persons". This communication must not be acted on – or relied on – by persons who are not "relevant persons". Any investment or investment activity to which this document relates is available only to "relevant persons" and will be

engaged in only with "relevant persons". By "relevant persons" we mean persons who:

- Have professional experience in matters relating to investments falling within Article 19(5) of the Financial Promotions Order.
- Are persons falling within Article 49(2)(a) to (d) of the Financial Promotion Order ("high net worth companies, unincorporated associations etc").
- Are persons to whom an invitation or inducement to engage in investment activity (within the meaning of section 21 of the Financial Services and Markets Act 2000) – in connection with the issue or sale of any securities – may otherwise lawfully be communicated or caused to be communicated.

## Limitation of liability

All information, including statements of fact, contained in this research report has been obtained and compiled in good faith from sources believed to be reliable. However, no representation or warranty, express or implied, is made by Swedbank with respect to the completeness or accuracy of its contents, and it is not to be relied upon as authoritative and should not be taken in substitution for the exercise of reasoned, independent judgment by you.

Opinions contained in the report represent the analyst's present opinion only and may be subject to change. In the event that the analyst's opinion should change or a new analyst with a different opinion becomes responsible for our coverage, we shall endeavour (but do not undertake) to disseminate any such change, within the constraints of any regulations, applicable laws, internal procedures within Swedbank, or other circumstances.

Swedbank is not advising nor soliciting any action based upon this report. This report is not, and should not be construed as, an offer to sell or as a solicitation of an offer to buy any securities.

To the extent permitted by applicable law, no liability whatsoever is accepted by Swedbank for any direct or consequential loss arising from the use of this report.

## Reproduction &amp; dissemination

This material may not be reproduced without permission from Swedbank Large Corporates & Institutions. This report is not intended for physical or legal persons who are citizens of, or have domicile in, a country in which dissemination is not permitted according to applicable legislation or other decisions.

Produced by Swedbank Large Corporates & Institutions.

## Address

Swedbank LC&I, Swedbank AB (publ), SE-105 34 Stockholm.  
Visiting address: Landsvägen 42, Sundbyberg