

16 December, 2015

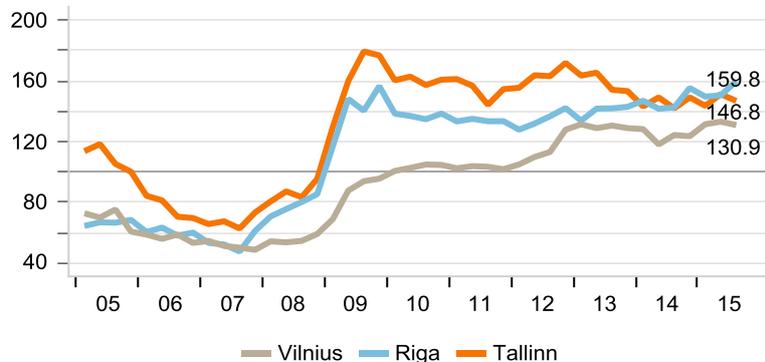
# Baltic Housing Affordability Index

## The housing affordability index (HAI) increased to 130.9 in Vilnius, 159.8 in Riga, and 146.8 in Tallinn

- In Tallinn, affordability rose by 4.9 points in the third quarter of this year compared with the same period in 2014, mainly due to a 7.9% rise in net wages, which was higher than apartment price growth for the first time since 2012.
- In Riga, the HAI increased by 17.3 points, also mainly due to 8% higher wages, but slightly falling apartment prices also contributed.
- In Vilnius, the HAI rose by 6.6 points because of a 39-basis – point decrease in interest rates and 3.8% higher wages.
- The time needed to save for a down payment decreased by 2.5 weeks in Tallinn, to 29.7 months, and by 2 months and 2.5 weeks in Riga, to 25 months, but it remained at 36.4 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



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



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

Andrejs Semjonovs  
+371 67 445 844;  
[Andrejs.Semjonovs@swedbank.lv](mailto:Andrejs.Semjonovs@swedbank.lv)

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

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

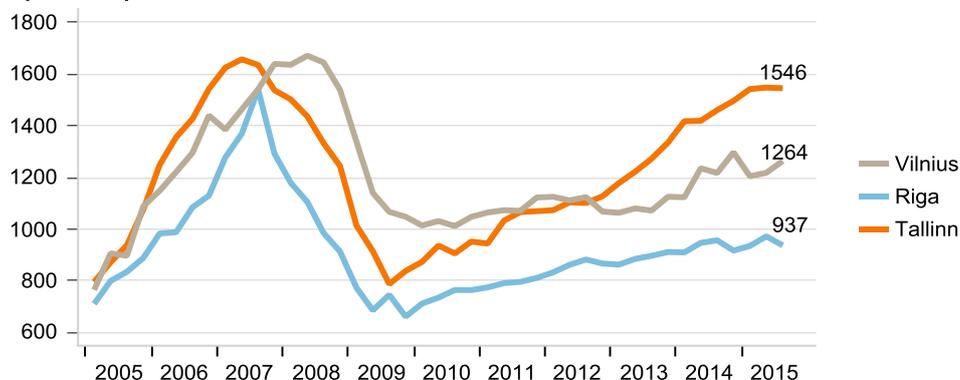
### Apartment prices and real estate market developments

Apartment price growth slowed in Tallinn and accelerated in Vilnius, but it decreased in Riga for the first time since 2010.

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

Tallinn: 5.8  
Riga: -2.1  
Vilnius: 3.8

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



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

Market activity in **Tallinn** has slowed. The annual average growth rate for the number of deals dropped from nearly 28% between April and August to 16% between July and November. The annual growth rate of apartment prices also decreased significantly, from 9.1% in the second quarter to 5.8% in the third quarter. The slowdown in price growth was highest near the city centre, falling from 15% in the second quarter to only 2% in the third. Price growth accelerated in only one of the bedroom suburb regions (Haabersti). This was due to a temporary effect in August, when price growth spiked from 8% to 27%. The long-term trend, however, indicates a gradual deceleration of price growth. Preliminary data for October and November show a further slowdown of price growth in the city as a whole. In November, total annual price growth was only 2%, whereas prices near the city centre decreased by 3.3% annually. The Tallinn housing market has stabilised, but a further slowdown of growth or even a decrease in prices is a possibility. According to building permits' data, the supply of new building permits for apartments and the number of construction projects started stayed very high in the third quarter. This will keep the supply of new apartments high in the near future. The housing loans' portfolio continues to grow moderately, increasing by 4% in October on an annual basis. However, new lending growth decelerated from 24% between March and May to 9% between August and October. This is a sign of weaker demand growth. The average interest rate on housing loans, which was 2.25% in October, has not changed much during the year. With the ECB prolonging its expansive monetary policy, we do not see interest rates rising substantially in the near future, keeping the idea of ownership over rent attractive.

Activity in the residential real estate market in **Riga** continued to gradually recover from the lows of the first quarter. The number of transactions in the third quarter grew by 13% on a quarterly basis, yet was still lower by 4% than a year ago. The moderate recovery remained resident driven – although nonresident transactions increased, nonresident demand remained sluggish for the fourth consecutive quarter. The sentiment of resident buyers seems to have improved, at least partly supported by a state-guaranteed mortgage loan programme for families with children. Under the programme, which gained momentum in mid-March, the Latvian Development Finance Institution (ALTUM) provides guarantees for mortgage loans granted by commercial banks to families with children for new home purchase or construction. Mortgage loans under this programme have a smaller required down payment, thus making the mortgage more available for families with stable incomes but without sufficient savings. ALTUM deals constituted about 7-8% of the total transactions involving apartments in Riga in the third quarter, and the programme will continue to contribute to resident activity in the next quarter. New mortgage lending grew by 19% annually in the third quarter, although credit stock was still falling. The supply of new apartments remained rather pale.

The average apartment price declined by 2.1% annually in the third quarter. Prices of Soviet-era apartments in the suburbs, which form the majority of the supply of the apartments in Riga, continued to grow moderately, by 5%. Prices of new projects declined both in the city centre and suburbs – down by 14% and 13%, respectively. This was facilitated by a mix of factors. First, a couple of cheaper construction projects came onto market – this considerably lowered the average price, as the total number of deals in these segments continues to be very small. Second, the sharp annual decline partly was the result

of a base effect: prices of new projects had spiked in the third quarter of last year in response to greater nonresident activity before the legislative changes, which made it more costly for foreign investors to obtain residence permits for buying a property. Third, at least to some extent, the prices might have finally started to adjust to the persistently sluggish nonresident demand.

In **Vilnius**, activity continued its recovery from the weak beginning of this year. The number of transactions in the first half of this year was 16.3% lower than during the same period a year ago, but in the third quarter it increased by about 10% on an annual basis. However, the number of transactions in the primary market decreased on a quarterly basis. This was mainly due to the significantly smaller number of sales of economy-class apartments, as some of the buyers might have been in a hurry to purchase real estate before the introduction of stricter lending conditions by the Bank of Lithuania. As of November this year, the maximum term for credit was reduced from 40 to 30 years, and banks have to ensure that total loan payments do not exceed 50% of income if interest rates increase at least to 5%. This should not directly affect many borrowers, as the Bank of Lithuania estimates that, if those rules had been applied in 2014, only 1% of existing borrowers would not have been eligible for a mortgage. Price growth also rebounded in the third quarter, as the average price of sold apartments increased by 3.8% in annual terms. However, price growth for new apartments was lower.

The supply of new apartments remains rather high – developers estimate that the number of unsold apartments is close to 2-3 years of sales in Vilnius as the number of newly built apartments has been higher than the demand. This situation will limit price growth; nevertheless, conditions for demand are favourable as well – housing affordability remains at a high level, consumer confidence is improving, wage growth is expected to accelerate, rent yield is at a high level, and mortgage interest rates remain at historically low levels. Moreover, the number of newly built apartments and the number of apartments for which building permits were issued decreased significantly in the third quarter. This shows that supply growth should be moderating as well.

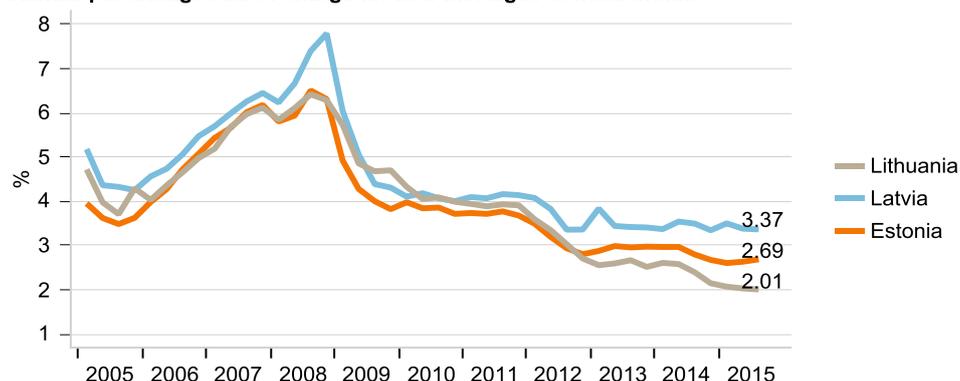
### Interest rates on mortgages

Mortgage interest rates decreased on an annual basis in all three countries. The six-month euro interbank offered rate (Euribor), which is most commonly used for mortgage interest rates in Estonia and Lithuania, fell from 0.27% in the third quarter of 2014 to 0.04% in the third quarter of this year. The three-month Euribor (most commonly used for mortgage interest rates in Latvia) also decreased, by 19 basis points, during the same period.

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

**Estonia: -11**  
**Latvia: -13**  
**Lithuania: -39**

Annual percentage rate of charge for new mortgages to households



Source: European Central Bank

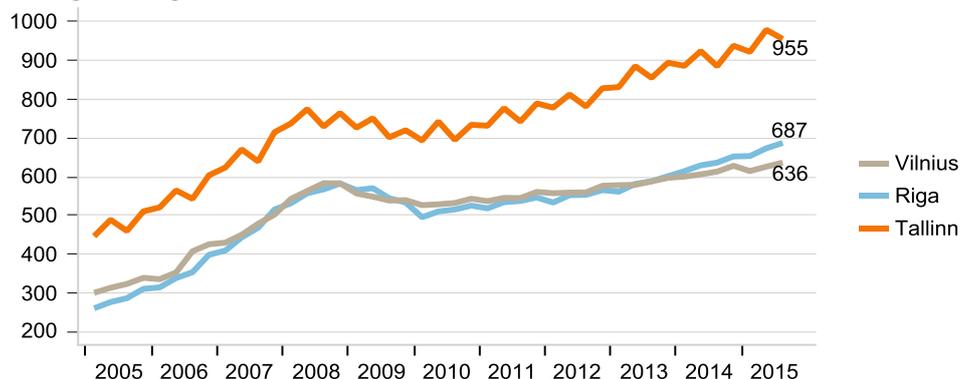
### Average net wages

Annual wage growth remained rapid in Latvia and Estonia and accelerated somewhat in Lithuania as well.

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

Tallinn: 7.9  
Riga: 8.0  
Vilnius: 3.8

Average net wage, EUR



Sources: National statistical departments

The HAI value of 146.8 in Tallinn means that household net wages in this city are 46.8% 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 59.8% higher – and, in Vilnius, 28.5% higher - than required to fulfil this norm.

### Months to save for the down payment

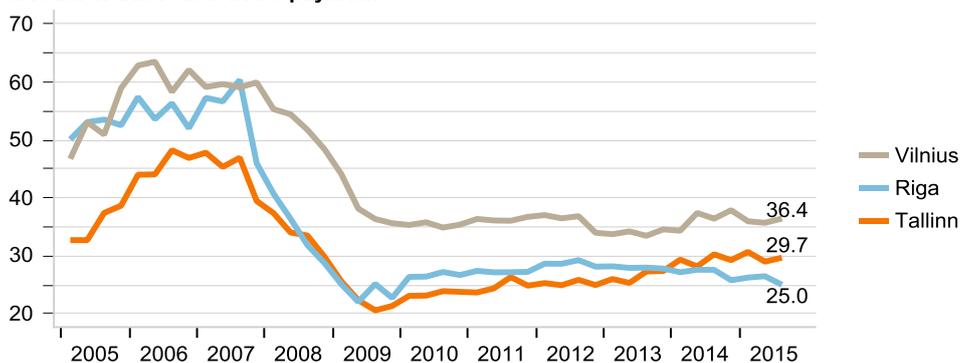
Over the past year, the number of months needed to save for a down payment, which equals 15% of an apartment price, did not change in Vilnius as prices increased by the same amount as wages. Due to wages rising faster than housing prices (and housing prices decreasing in Riga), the number decreased by 2 months and 2.5 weeks in Riga, and by 2.5 weeks in Tallinn.

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: -0.6  
Riga: -2.6  
Vilnius: 0.0

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 apartment prices were to rise by 20%, apartments would remain affordable in all three cities. The affordability margin would narrow by 21.8 points in Vilnius, by 26.6 points in Riga, and by 24.5 points in Tallinn, to 109.1, 133.2, and 122.4, respectively.

The margins would disappear in each of the three Baltic capitals if apartment prices were to increase by more than 30.9% in Vilnius, by 59.8% in Riga, and by 46.8% in Tallinn – i.e., by the amount of the current margins. Households would no longer be able to afford apartments if interest rates were to increase by more than 2.1 percentage points in Vilnius, more than 4.2 percentage points in Riga, and more than 3.2 percentage points in Tallinn, if other variables remained unchanged.

**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

## Appendix 1

	Housing affordability index			Months to save for the down payment		
	Tallinn	Riga	Vilnius	Tallinn	Riga	Vilnius
2005 Q1	113.7	64.3	72.6	32.7	50.1	46.7
2005 Q2	118.4	66.7	69.8	32.7	53.1	53.1
2005 Q3	105.2	66.4	75.2	37.4	53.5	50.9
2005 Q4	100.1	68.3	60.5	38.6	52.5	58.9
2006 Q1	84.2	60.2	58.6	44.0	57.4	62.8
2006 Q2	81.2	63.2	55.8	44.0	53.6	63.5
2006 Q3	70.4	57.9	58.6	48.2	56.3	58.3
2006 Q4	69.5	59.9	53.1	46.9	52.0	62.1
2007 Q1	65.5	53.1	54.4	47.8	57.3	59.1
2007 Q2	67.4	52.0	51.1	45.3	56.6	59.6
2007 Q3	62.6	47.4	50.0	46.9	60.4	59.1
2007 Q4	73.2	61.1	48.5	39.5	46.0	59.9
2008 Q1	80.5	70.6	54.1	37.3	40.7	55.3
2008 Q2	87.1	75.5	53.5	34.0	36.4	54.4
2008 Q3	83.3	80.1	54.4	33.5	31.8	51.7
2008 Q4	95.4	85.3	59.0	29.8	28.8	48.4
2009 Q1	129.6	116.8	68.8	25.6	25.1	44.1
2009 Q2	160.0	148.2	87.7	22.3	22.0	38.1
2009 Q3	179.5	140.4	93.9	20.6	25.1	36.3
2009 Q4	176.9	156.6	95.5	21.3	22.7	35.6
2010 Q1	160.5	138.5	100.6	23.1	26.4	35.3
2010 Q2	162.9	136.9	102.7	23.1	26.4	35.8
2010 Q3	157.3	134.8	104.9	23.9	27.2	34.9
2010 Q4	160.9	138.5	104.6	23.8	26.7	35.4
2011 Q1	161.3	133.3	102.4	23.7	27.4	36.4
2011 Q2	156.9	135.0	103.8	24.4	27.1	36.1
2011 Q3	144.3	133.4	103.4	26.3	27.2	36.0
2011 Q4	154.7	133.5	101.8	24.8	27.2	36.7
2012 Q1	155.5	127.9	104.9	25.3	28.6	37.0
2012 Q2	163.8	131.9	109.8	24.9	28.6	36.5
2012 Q3	163.2	136.8	113.2	25.8	29.2	36.8
2012 Q4	172.0	142.1	127.9	24.9	28.1	34.0
2013 Q1	163.6	133.8	131.4	26.0	28.2	33.7
2013 Q2	165.5	141.8	128.9	25.3	27.9	34.2
2013 Q3	154.2	142.0	130.6	27.3	28.0	33.4
2013 Q4	153.4	143.0	128.9	27.4	27.8	34.6
2014 Q1	143.2	147.0	128.2	29.3	27.2	34.3
2014 Q2	149.2	141.7	118.1	28.2	27.6	37.4
2014 Q3	141.9	142.6	124.3	30.3	27.6	36.4
2014 Q4	149.2	155.4	123.6	29.3	25.8	37.9
2015 Q1	143.6	149.7	131.5	30.7	26.2	36.0
2015 Q2	151.3	150.6	133.2	29.0	26.5	35.7
2015 Q3	146.8	159.8	130.9	29.7	25.0	36.4
High	179.5	159.8	133.2	48.2	60.4	63.5
Low	62.6	47.4	48.5	20.6	22.0	33.4
Average	129.8	112.2	92.2	31.0	35.1	43.7

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

#### 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 & 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 & 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