

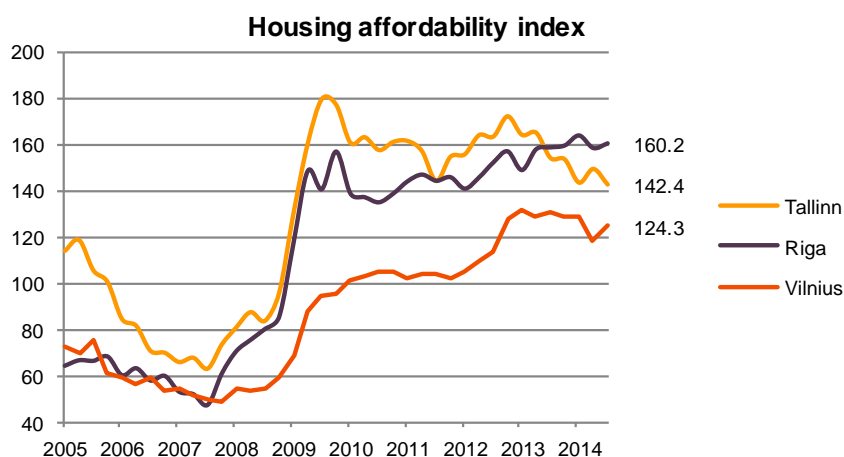
12 December, 2014

## Baltic Housing Affordability Index

**The housing affordability index (HAI) decreased to 142.4 in Tallinn and 124.3 in Vilnius, but increased to 160.2 in Riga**

- In Tallinn, affordability diminished by 11.5 points in the third quarter this year compared with the same period in 2013, due to a 14.6% annual increase in apartment prices.
- In Riga, the HAI rose marginally (by 1.7 points) because wage growth outpaced apartment price growth.
- In Vilnius, the HAI fell by 6.3 points because of a 13.6% annual increase in apartment prices.
- The time needed to save for a down payment increased over the past year by almost three months in Tallinn, to 30.2 months, and by three months in Vilnius, to 36.4 months. It has decreased in Riga by about two weeks, to 24.5 months. However, recent legislative changes in Latvia will approximately double the size of the current down payment and thus double the time needed to save for it, which will make it more difficult to take on a mortgage.

*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.*



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



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

### Apartment prices and real estate market developments

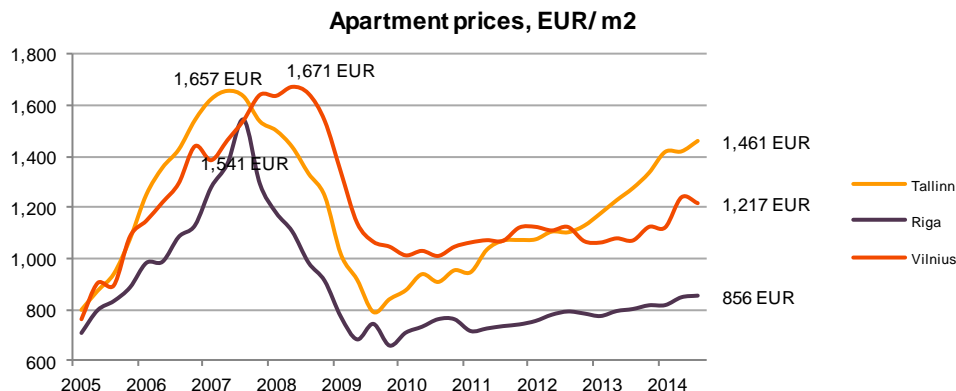
Apartment prices continued their rapid pace of growth in Tallinn and in Vilnius. In Riga, prices continued increasing but at a more modest pace.

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

Tallinn: 14.6

Riga: 6.5

Vilnius: 13.6



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

In Estonia, the annual price growth of real estate remained one of the highest in the EU in the third quarter. In **Tallinn**, the apartment price growth decelerated slightly, from 15.7% in the second quarter to 14.6% in the third quarter. Prices in the third quarter were roughly 12% lower than during their peak in 2007. This means that many apartment owners, who bought their property during the boom years, are finally able to sell their real estate at a price similar to the price they paid many years ago. As a response to high prices, activity in the Tallinn real estate market continued to slow in the third quarter, as the number of deals decreased by 9% year on year (YoY). Meanwhile, the supply of apartments grew notably, due to the completion of many new developments, which, in turn, increased the supply of old apartments as well. New – and more expensive – apartments were also one of the reasons behind the rapid price growth. Nevertheless, increasing supply and lagging demand should continue to decelerate the overall price growth of apartments. Supported by low interest rates, the activity on the loan market remained solid - the housing loan stock continued its modest but stable growth, increasing by 2.3% annually. Loan turnover grew by 18% YoY. To minimise the probability of a housing loan boom, the central bank will introduce a few housing loan restrictions, starting January 1, 2015: a limit on the loan-to-value (LTV) ratio of new housing loans (85%), a limit on the debt service-to-income (DSTI) ratio (50%), and a limit on the maximum maturity of loans (30 years). These limits are in line with the existing conditions of housing loans in the commercial banks and, therefore, will not affect the volume of housing loans issued.

In **Riga**, activity in the residential real estate market was rather volatile during the third quarter. While spiking in July-August and plummeting in September, the total number of deals declined by 1.7% annually. The volatility was by and large nonresident driven, stemming from the legislative amendments enforced on September 1. One of the changes is that, to obtain a residence permit for 5 years now, a foreign investor has to pay into the state budget 5% of the property value. Additionally, the minimum property value on which the permit can be obtained was raised from EUR 142,300 to EUR 250,000. The annual apartment price growth remained rather stable, though, at 6.5%. Yet, the increase in activity in July-August has pushed up prices of new apartments in the city centre (largely because nonresidents are buying into the market before the legislation changes), which rose by a one-third in the third quarter. New projects in the suburbs, a next alternative for nonresidents, rose in price by 11%. Prices of Soviet-era projects in the suburbs grew by a more moderate 6.8%. Soviet-era projects in the city centre saw prices decreasing moderately.

Our index measures affordability (i.e., the ability to service a standardised mortgage when the loan has been obtained), but it does not measure how available the mortgage itself is (i.e., what is the ability to provide the down payment and, hence, obtain the loan). The recent legal framework changes have constrained household access to credit. The parliament has introduced a nonrecourse clause for mortgage loans (i.e., in case of a default, debt is limited only to the value of the collateral, i.e., the property at market price); currently, this is planned to come into force on March 1, 2015. This would approximately double the size of the required down payment, thereby sharply reducing the ability of households to obtain a mortgage (see the “months to save for down payment” section for more details)--even if our measure of housing affordability (the HAI) continued to improve.

In **Vilnius**, activity in the real estate sector decreased by 1.7% in the third quarter of this year compared with the same period a year ago. Annual price growth remained high, at 13.6% in the third quarter. Activity decreased due to a fall of 17.3% in the number of deals in the old apartment segment (two-three years and older), while activity growth in the new apartment segment was rapid (twice as high as a year ago). This shows that both supply and demand of new apartments were high. The number of completed apartments in the third quarter of this year reached 968--the highest since 2009. The number of apartments for which building permits were granted was twice as high as a year ago in the third quarter. Therefore, the supply of new apartments should remain sufficient. Nevertheless, the price growth was rapid (13.2% YoY) despite the greater availability of new apartments. Some of the increase in apartment prices could be explained by the larger share sold of apartments in the higher-price segment. For example, in October the price of new apartments increased by 24.5% in a year because the sales of apartments in the higher-price segment were registered. Activity in the old apartment segment has been dropping and prices have been increasing rapidly for two quarters now. Rising price expectations might have had a negative effect on supply and a positive effect on demand, which has lowered the number of deals, but raised prices. For now, the affordability drop has been curbed by falling interest rates, and the rent yield has remained close to its long-term average; however, if prices were to continue growing faster than wages for a prolonged period, the sustainability of the real estate market would be threatened.

However, the financial risk is lower now than in the pre-crisis period due to the rules of responsible lending introduced by the Bank of Lithuania in 2011; these state that the LTV ratio cannot exceed 85%, and that loan payments cannot be higher than 40% of persons' (or households') income. Moreover, this year, only 30.4% of total apartments in Lithuania were purchased with loans, compared with over 50% before the crisis. We expect that annual activity growth in the real estate market might decrease at the beginning of 2015, as it almost reached historical highs at the beginning of this year; growth should thereafter remain stable. After the adoption of the euro, irrational expectations about price growth and consequent excessive demand should abate, and activity in the residential real estate market should calm down. Prices are likely to be stable next year or grow only slightly, as the construction input price has increased by only 2.7% in a year during the first three quarters of 2014, and the supply of new apartments is high.

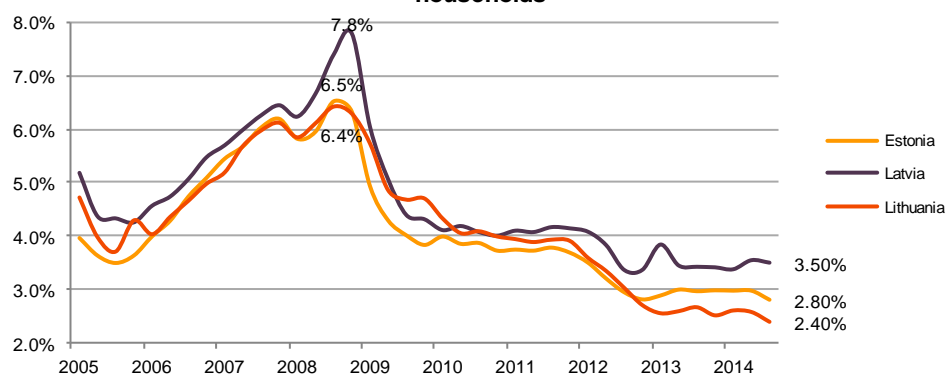
### Interest rates on mortgages

Mortgage interest rates increased slightly on an annual basis in Latvia. They declined in Lithuania and Estonia. The six-month euro interbank offered rate (Euribor), which is most commonly used for mortgage interest rates in Estonia and Lithuania, decreased from 0.34% in the third quarter last year to 0.27% in the third quarter this year. The three-month Euribor (most commonly used for mortgage interest rates in Latvia) also decreased by 6 basis points during the same period. This shows that the interest rate margin for mortgages likely narrowed in Lithuania and Estonia, but widened slightly in Latvia (possibly due to higher risk assessment).

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

**Estonia: -16**  
**Latvia: 8**  
**Lithuania: -27**

### Annual percentage rate of charge for new mortgages to households



Sources: National central banks and ECB.

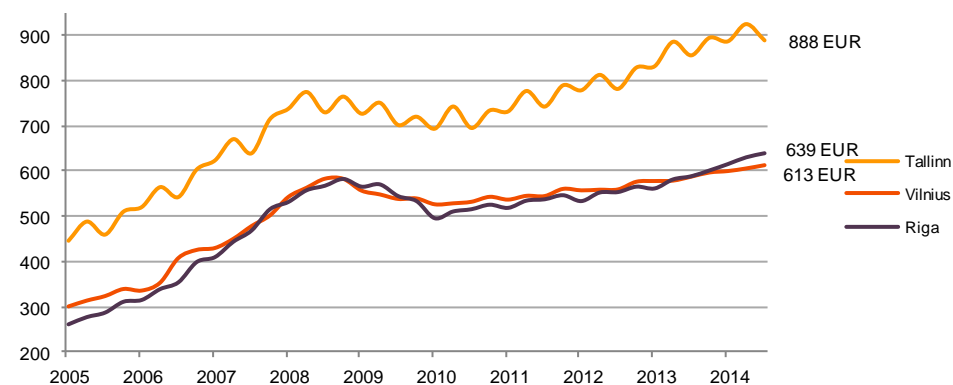
### Average net wages

Annual wage growth decelerated further in Tallinn, and growth remained the highest in Riga.

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

**Tallinn: 3.9**  
**Riga: 8.7**  
**Vilnius: 4.3**

**Average net wage, EUR**



Sources: National statistical departments.

The HAI value of 142.4 in Tallinn means that household net wages in this city are 42.4% 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 60.2% higher – and, in Vilnius, 24.3% higher - than required to fulfil this norm.

**Months to save for the down payment**

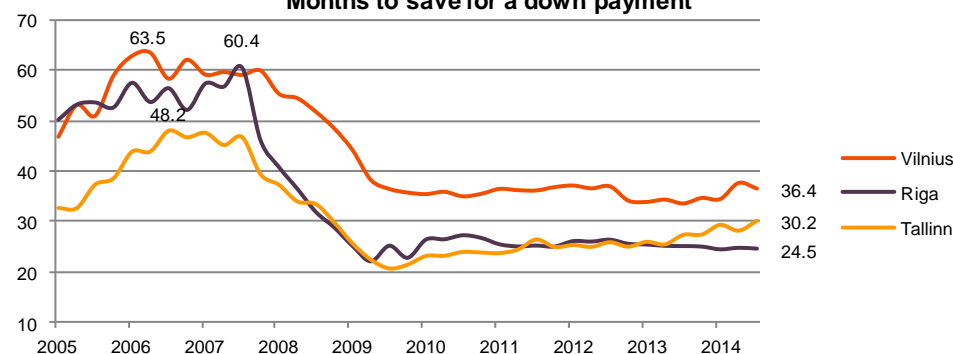
Over the past year, the number of months needed to save for a down payment, which equals 15% of an apartment price, increased by about three months in Vilnius and Tallinn and decreased by more than two weeks in Riga. However, the introduction of the nonrecourse clause for mortgages in Latvia would approximately double the size of the down payment compared with the current regulation, thus also doubling the time needed to save for it. For a 30% necessary down payment, a household in Riga would then need to save for about four years, compared with the current two years. This would seriously impair households' ability to step into the housing market and improve their living conditions, especially for those from less-well-off income groups.

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: 2.8**  
**Riga: -0.5**  
**Vilnius: 3.0**

**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 20.7 points in Vilnius, by 26.7 points in Riga, and by 23.7 points in Tallinn, to 103.6, 133.5, and 118.7, respectively.

The margins would disappear in each of the three Baltic capitals if apartment prices were to increase by more than 24.3% in Vilnius, by 60.2% in Riga, and by 42.4% 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 1.7 percentage points in Vilnius, more than 4.3 percentage points in Riga, and more than 3.0 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 capitals.
- 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 for Latvia and Estonia and weighted against different currencies (the litas and the euro) in Lithuania-- 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	143.8	102.4	23.7	25.4	36.4
2011 Q2	156.9	146.7	103.8	24.4	25.0	36.1
2011 Q3	144.0	144.1	103.4	26.4	25.2	36.0
2011 Q4	154.5	145.6	101.8	24.9	25.0	36.7
2012 Q1	155.5	140.6	104.9	25.3	26.0	37.0
2012 Q2	163.8	145.5	109.8	24.9	25.9	36.5
2012 Q3	163.2	151.9	113.1	25.8	26.3	36.9
2012 Q4	172.0	156.7	127.8	24.9	25.5	34.0
2013 Q1	164.0	148.6	131.3	25.9	25.4	33.8
2013 Q2	164.9	157.6	128.9	25.4	25.1	34.2
2013 Q3	153.9	158.4	130.6	27.3	25.1	33.4
2013 Q4	153.3	159.3	128.9	27.4	25.0	34.6
2014 Q1	143.2	163.6	128.2	29.3	24.4	34.3
2014 Q2	149.2	158.1	117.7	28.2	24.7	37.5
2014 Q3	142.4	160.2	124.3	30.2	24.5	36.4
High	179.5	163.6	131.3	48.2	60.4	63.5
Low	62.6	47.4	48.5	20.6	22.0	33.4
Average	127.9	113.4	88.3	31.2	35.0	44.4

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

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