

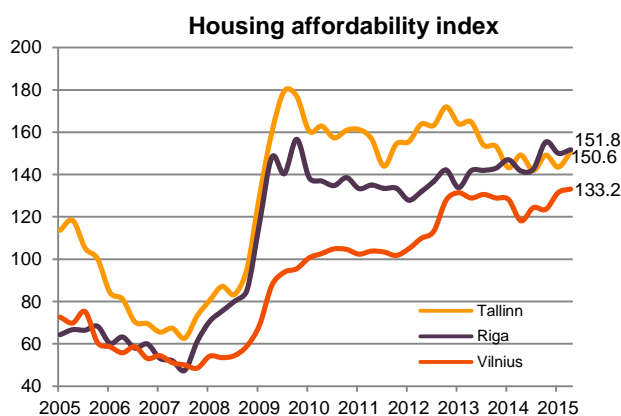
7 September, 2015

Baltic Housing Affordability Index

The housing affordability index (HAI) increased to 133.2 in Vilnius, 151.8 in Riga, and 150.6 in Tallinn

- In Tallinn, affordability rose marginally by 1.4 points in the second quarter this year compared with the same period in 2014, due to a 33-basis-point decrease in interest rates.
- In Riga, the HAI increased by 10.1 points because wage growth continued outpacing apartment price growth; moreover, interest rates decreased by 16 basis points as well.
- In Vilnius, the HAI rose by 15 points because of a 55-basis – point decrease in interest rates and a 1.4% decrease in apartment prices.
- The time needed to save for a down payment increased over the past year by almost one month in Tallinn, to 29.1 months, but decreased by one month and three weeks in Vilnius, to 35.7 months, and by one month and more than one week in Riga, to 26.3 months.

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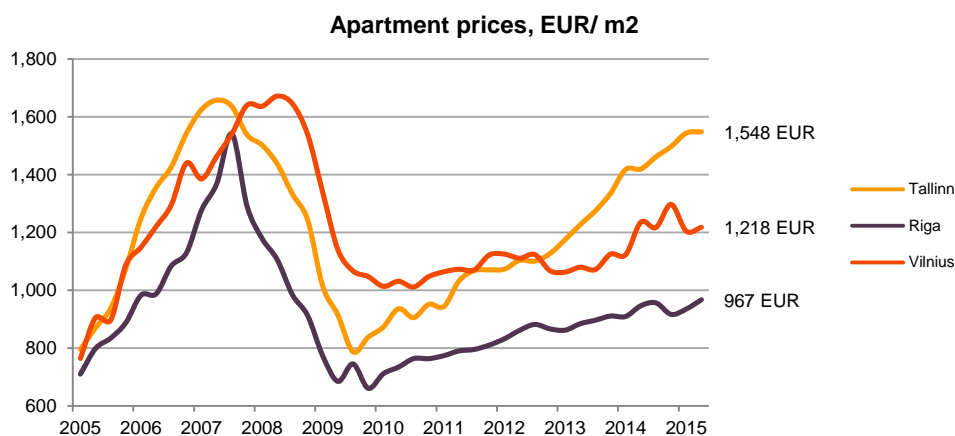
Components of HAI: apartment prices, interest rates, and wages

Apartment prices and real estate market developments

Apartment price growth remained the strongest in Tallinn and moderate in Riga, while in Vilnius it decreased for the first time since 2013.

Annual growth, 2nd quarter, %

Tallinn: 9.1
Riga: 2.2
Vilnius: -1.4



The real estate market is very active in **Tallinn**. Due to the completion of several development projects, the market was busy between April and August this year. The number of deals was much higher than last year (+27%, year on year, between April and August). In the second quarter of 2015, the growth of apartment prices in Tallinn remained fast (+9.1%, year on year). Prices were pushed higher by recently renovated and smaller apartments near the city centre, where the price for one square meter is higher. In the second quarter, prices were around 7% lower than during their peak in the second quarter of 2007, when an average price of a square meter of an apartment sold in Tallinn was 2.5 times higher than the average net wage level in the capital (in the second quarter of 2015, the ratio was much smaller, 1.6). Preliminary data for July and August show that the growth of apartment prices in Tallinn may have slowed in the third quarter (prices were up by around 5%, year on year, in July-August). We expect the growth of apartment prices to slow as, according to building permits' data, the supply of new apartments will grow substantially. The housing loans' portfolio continues to grow moderately, increasing by 3.9% over the year in July. The average interest rate on loans issued by banks remains low because the six-month Euribor is very low. The average interest rate on housing loans was 2.3% in July, the same as in May and June.

After a very weak first quarter, activity in the residential real estate market in **Riga** picked up gradually in April-July. The number of transactions, however, was still lower, by 7%, than a year ago. The mild activity recovery was resident driven, while non-resident demand remained sluggish. The more vigorous activity among residents seems to have been supported by a couple of factors. First, the planned introduction of the non-recourse clause for mortgage loans resulted in a sharp increase in the required down payment at the end of last year, but this clause was made optional as of March 1, 2015. The loan down payment without the nonrecourse clause is now similar to the level before the initial legal framework changes, and the sentiment of potential buyers and their ability to take a loan have thus improved. A part of the resident deals in the second quarter could thus reflect a postponed demand, i.e., buyers waiting to purchase real estate until the nonrecourse clause was made optional. Second, a state-guaranteed mortgage loan programme for families with children launched on January 2015 also contributed to the demand recovery. Under the programme, 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. In January, one commercial bank joined the programme, and, starting in mid-March, the largest banks followed the suit; activity in the programme increased (about 6% of the deals in the residential real estate market in Riga in Apr-Jul). Overall, new mortgage lending grew by 6% annually in the second quarter, although credit stock was still falling.

Real estate price annual growth remained at a very moderate 2.2% in the second quarter. Prices of Soviet-era apartments in the suburbs, which form the majority of the supply of the apartments in Riga, continued to grow modestly, by 4%. Price growth of new projects varied substantially between the city centre and the suburbs – prices up by 32% and down by 13% in center and suburbs, respectively. The volatility is largely explained by individual projects'

causing large price swings, since the total number of deals in these segments continues to be very small.

In **Vilnius**, the decrease in activity in the real estate sector eased significantly in the second quarter of this year. The annual decrease in the number of transactions slowed from almost one-third in the first quarter to 3.1% in the second. This, however, was mostly due to higher sales of old apartments (two-three years and older), while activity in the new-apartment segment did not rebound as much. However, we expect that activity should remain at the current level throughout the year as conditions for demand are favourable – the housing affordability index is at a record high, the rent yield is rising rapidly as the rent price is outpacing real estate price growth, confidence is higher than a year ago, and mortgage rates are at record lows. Apartment prices fell in the second quarter of this year on an annual basis. This was partly a correction from last year as, at the beginning of 2014, activity increased significantly due to such one-off factors as the euro introduction. Before the introduction, the purchase of real estate was encouraged because of the fear of higher prices and the spending of cash from shadow activities. Emigrants might have contributed to the increase as well. Buyers were in a rush, and this was one of the reasons for the rapid price growth. Price growth this year will be limited by the supply of new apartments, which is at its highest level since the crisis. It is expected that this year about 4,000 new apartments will be built. This equals almost two years of sales. Moreover, construction input price growth slowed down this year somewhat. However, because of favourable conditions for demand and a slow down in , we do not expect that prices will decrease for this year as a whole..

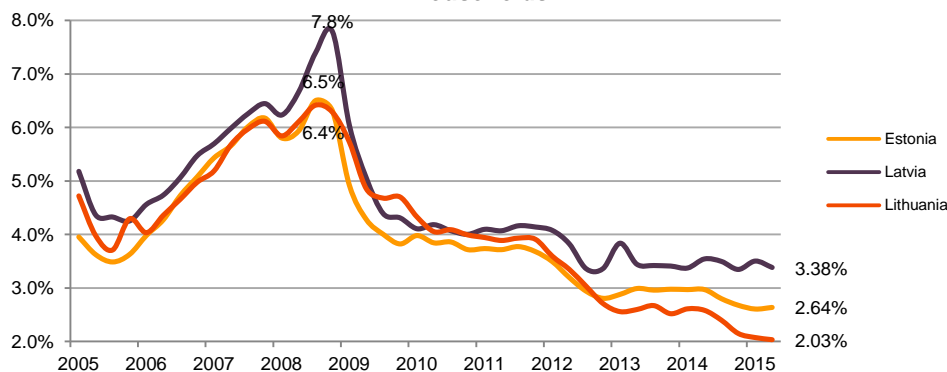
Interest rates on mortgages

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, decreased from 0.39% in the second quarter of 2014 to 0.06% in the second quarter of this year. The three-month Euribor (most commonly used for mortgage interest rates in Latvia) also decreased, by 30 basis points, during the same period.

Annual growth, 2nd quarter, basis points

Estonia: -33
Latvia: -16
Lithuania: -55

Annual percentage rate of charge for new mortgages to households



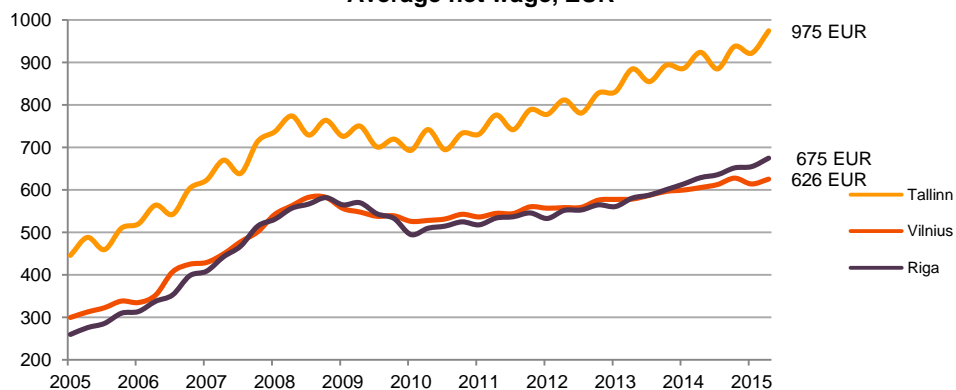
Average net wages

Annual wage growth accelerated somewhat in all three capitals, but remained the highest in Riga.

Annual growth, 2nd quarter, %

Tallinn: 5.5
Riga: 7.3
Vilnius: 3.3

Average net wage, EUR



The HAI value of 150.6 in Tallinn means that household net wages in this city are 50.6% 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 51.8% higher – and, in Vilnius, 33.2% higher – than required to fulfil this norm.

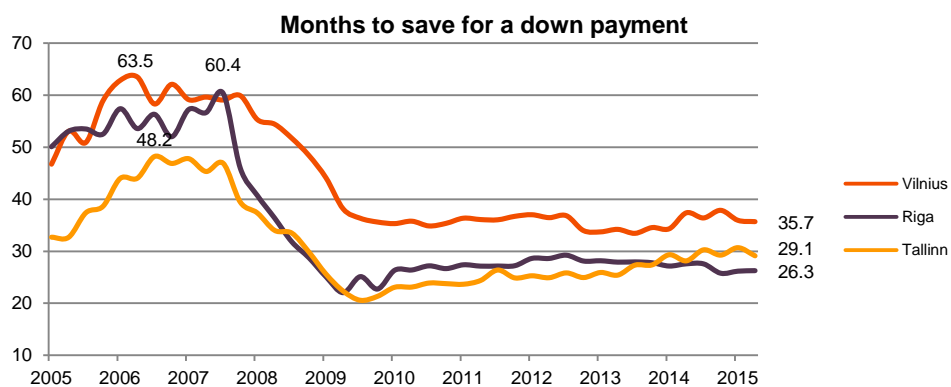
Months to save for the down payment

Over the past year, the number of months needed to save for a down payment, which equals 15% of an apartment price, increased by almost one month in Tallinn. Due to wages rising faster than housing prices (and housing prices decreasing in Vilnius), the number decreased by one month and three weeks in Vilnius, and by one month and more than one week in Riga.

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

Annual growth, 2nd quarter, months

Tallinn: 1.0
Riga: -1.3
Vilnius: -1.7



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 22.2 points in Vilnius, by 25.3 points in Riga, and by 25.1 points in Tallinn, to 111.0, 126.5, and 125.5, respectively.

The margins would disappear in each of the three Baltic capitals if apartment prices were to increase by more than 33.2% in Vilnius, by 51.8% in Riga, and by 50.6% 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 2.3 percentage points in Vilnius, more than 3.7 percentage points in Riga, and more than 3.5 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	144.0	133.4	103.4	26.4	27.2	36.0
2011 Q4	154.5	133.5	101.8	24.9	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	164.0	133.8	131.4	25.9	28.2	33.7
2013 Q2	164.9	141.8	128.9	25.4	27.9	34.2
2013 Q3	153.9	142.0	130.6	27.3	28.0	33.4
2013 Q4	153.3	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	143.5	150.1	131.5	30.7	26.2	36.0
2015 Q2	150.6	151.8	133.2	29.1	26.3	35.7
High	179.5	156.6	133.2	48.2	60.4	63.5
Low	62.6	47.4	48.5	20.6	22.0	33.4
Average	129.3	111.1	91.3	31.1	35.3	43.9

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

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