

13 December, 2013

## Baltic Housing Affordability Index

### The housing affordability index (HAI) increased to 130.6 in Vilnius, but declined to 158.4 in Riga and 153.9 in Tallinn

- During the third quarter of 2013, housing affordability increased in Vilnius: the housing affordability index (HAI) – which 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 (sq. m.) – rose from 128.9 in the second quarter of this year to 130.6 in the third quarter. Over the same period, the HAI in Riga dropped from 158.8 to 158.4, and in Tallinn from 165.5 to 153.9. This means that—according to our norm of 30% of net wages for mortgage costs—in the third quarter household wages in Vilnius were higher than needed to afford an apartment by 30.6%; in Riga, by 58.4%; and, in Tallinn, by 53.9%..
- In Tallinn, the HAI shrank because of higher prices of apartments (in the third quarter, these rose by 4.1%) and because of a seasonal decrease in wages.
- In Riga, affordability was diminished by a 1.3% quarterly increase in apartment prices. However, because of 0.7% higher wages and slightly lower interest rates, affordability declined only marginally.
- In Vilnius, affordability rose mostly due to a 1.5% increase in wages and an 0.8% drop in apartment prices. A 7-basis-point rise in interest rates prevented a more significant increase in affordability.
- The time needed to save for a down payment shrank by three weeks in Vilnius, to 33.4 months; it increased by half a week in Riga, to 25.1 months; and by 9 weeks in Tallinn, to 27.3 months.
- *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.*



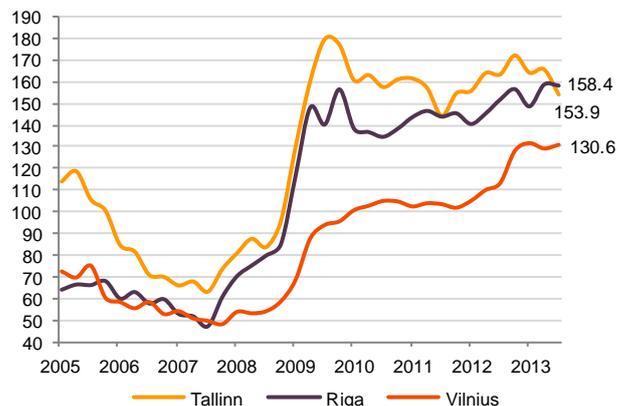
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**Housing affordability index**

	Tallinn	Riga	Vilnius
2005	109.3	66.4	69.6
2006	76.3	60.3	56.5
2007	67.2	53.4	51.0
2008	86.6	77.9	55.3
2009	161.5	140.5	86.4
2010	160.4	137.2	103.2
2011	154.2	145.0	102.8
2012	163.6	148.7	113.9
2013Q1	164.0	148.8	131.3
2013Q2	165.5	158.8	128.9
2013Q3	153.9	158.4	130.6



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.

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

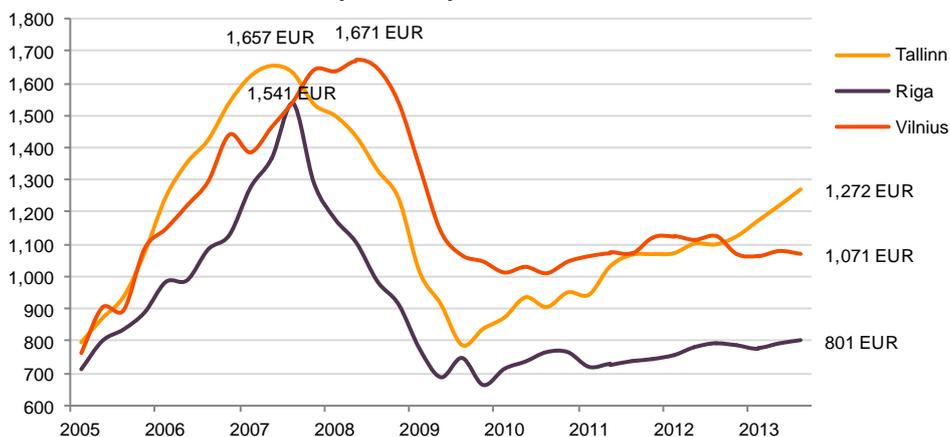
**Apartment prices**

From the second quarter of 2013 to the third, the price of apartments in the capital of Estonia, Tallinn, grew by 4.1%; prices increased by 1.3% and declined by 0.8% respectively, in the capitals of Latvia and Lithuania, Riga and Vilnius. On an annual basis, the price of an average-sized, 55 sq. m. apartment grew the most in Tallinn (15.6%); the price also rose in Riga (0.9%) but decreased by 4.7% in Vilnius.

In the third quarter, this standard apartment was the most expensive in Tallinn, where its price reached EUR 69,976. This same apartment cost EUR 58,923 in Vilnius and EUR 44,066 in Riga.

In the third quarter, apartment prices in Riga were 48.0% lower than those seen during the peak. Prices in Vilnius and Tallinn were, respectively, 35.9% and 23.2% lower than their peaks. The price increase from the trough was the smallest in Vilnius, and the prices in Tallinn recovered faster from their trough than in the other Baltic capitals.

**Apartment prices, EUR/ m2**



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

The real estate market in Riga continues to exhibit signs of improvement: activity has seen a pickup, and apartment prices are growing. In the third quarter, the number of deals increased by 23% annually (although from very low levels). Also, households have been more active in taking out mortgages – new lending for housing and renovations grew by 30% annually in the third quarter – but levels are still low. Overall, the majority of transactions are still settled using personal funds and not bank loans. Apartment prices, albeit slowly, continue growing: in the third quarter, the average price of an apartment in Riga was 0.9% higher than a year earlier. Prices of Soviet-era blockhouses, which form the majority of apartments in Riga, have been practically stagnant for the last three years. The availability of new projects for sale in the market and their quality vary over time, which is another reason behind the slow overall price growth (i.e., this year, fewer luxurious apartments are being sold). Nonresidents, who contribute almost one-third of the value of

real estate deals in Riga, will remain significant players in the residential real estate next year, as the heated discussions on limiting the amount of issued residence permits for investments in real estate (or increasing the investment threshold) have not yet resulted in legislative changes for next year. However, discussions will continue, and the current setup is likely to be adjusted eventually.

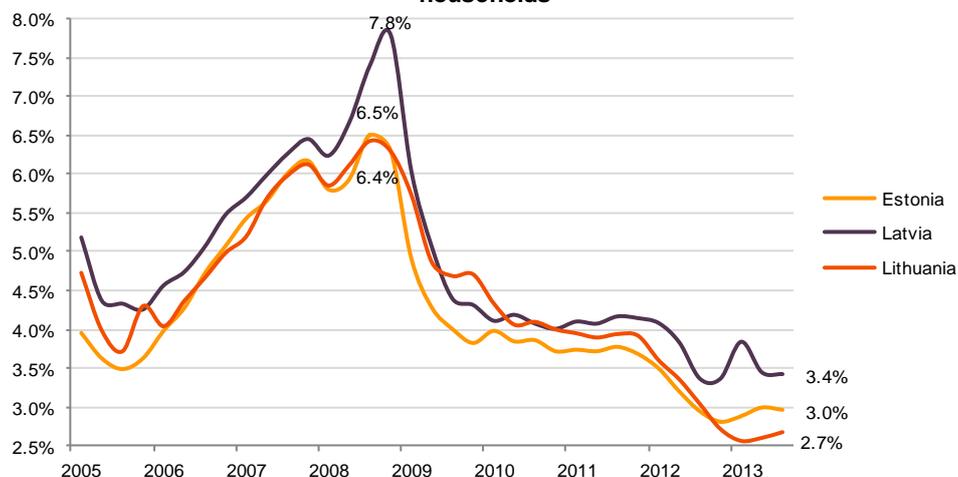
The real estate market in Tallinn remained active in the third quarter. In an annual comparison, the number of deals grew by 6%, and price growth continued to accelerate. According to real estate companies, asking prices and transaction prices grew at a similar pace. Although the number of deals reached the highest point after the crisis, it was still well below boom levels. Supply has decreased, especially the supply of smaller apartments, and, as a result, the average sale period is shrinking as well. Buyers are maintaining their interest in new developments; this is one of the main drivers behind the price growth, besides fast-growing wages and low interest rates. The turnover in housing loans grew by 19% in an annual comparison and by 7% in a quarterly comparison in the third quarter. Activity in the real estate market is expected to stabilise and price growth to slow down somewhat next year, as the supply will improve and price level is already high. Rapid growth of prices until now is hardly sustainable.

In Vilnius, activity in the real estate market in the third quarter increased by 29.6% compared with the same period a year ago. Activity in the Vilnius real estate market grew more rapidly during the first three quarters of this year than in the other two Baltic capitals. However, apartment prices in Vilnius decreased by 4.7% in the third quarter compared with the same time a year ago. The price of new apartments also fell by 10.9%. This was most likely caused by a change in the quality of sold apartments. Prices of apartments in the same segment in most cases increased. The supply of apartments in the primary market is quite high, amounting to the sales of 1.5 years. However, demand has not fallen behind. The growing demand is the consequence of decreasing unemployment and higher real wages. Even though consumer confidence has been falling for three months now, households' evaluation of their financial situation is still close to the pre-crisis level. The value of new mortgages increased by 35.8% during the first nine months of this year, compared with the same period a year ago. Low interest rates not only encourage borrowing for the purchase of real estate, they also encourage investing in real estate for higher returns. More households have started to expect higher or stable housing prices in the near future. Only 12% of respondents think that real estate prices will decrease, according to the survey carried out by the Bank of Lithuania. The long-term average rent yield in Vilnius is about 6%, and, in Kaunas (the second-largest city in Lithuania), about 8%. The interest rates, which are now at 2.7%, also suggest that owning an apartment is cheaper than renting it.

### Interest rates on mortgages

Interest rates slightly increased on a quarterly basis only in Lithuania, where they rose by 7 basis points to 2.7%. In Latvia, they declined by 2 basis points to 3.4%, and in Estonia by 3 basis points to 3.0%. The three-month euro interbank offered rate (EURIBOR) increased slightly from 0.207% in the second quarter to 0.224% in the third quarter of 2013.

Annual percentage rate of change for new mortgages to households

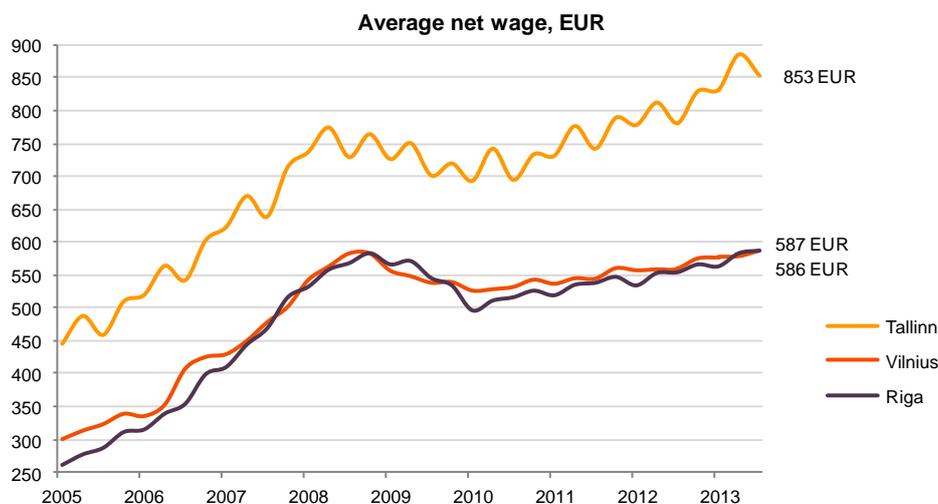


Sources: National central banks and ECB.

### Average net wages

From the second to the third quarter of 2013, average net wages of households increased by 1.5% in Vilnius and by 0.7% in Riga; however, they decreased by 3.6% in Tallinn due to

seasonal factors. In an annual comparison, wages expanded the most in Tallinn, where growth reached 9.2% and net wages earned by an average household were EUR 1,280 in the third quarter. In Riga, net wages increased by 6.0% to EUR 879. and, in Vilnius, by 5.1 % to EUR 881.



Sources: National statistical departments.

The difference in affordability between Tallinn and Vilnius arises only because of wage differences, as apartment prices and interest rates are lower in Lithuania. In the third quarter of this year, households earned 45.3% more in Tallinn than in Vilnius, while apartment prices in the Estonian capital were only 18.8% higher than in Vilnius. Housing in Riga is also considerably more affordable than in Vilnius, as households in Vilnius earn almost the same wage as their counterparts in Riga but pay 33.7% more in apartment prices.

The HAI value of 153.9 in Tallinn means that household net wages in this city are 53.9% 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 58.4% higher – and, in Vilnius, 30.6% higher - than required to fulfil this norm. In the third quarter, mortgage costs amounted to 19.5% of households' net wages in Tallinn, 18.9% in Riga, and 23.0% in Vilnius. Compared with the previous quarter, these ratios are higher by 1.4 and 0.1 percentage points in Tallinn and Riga, respectively, and lower by 0.3 percentage point in Vilnius.

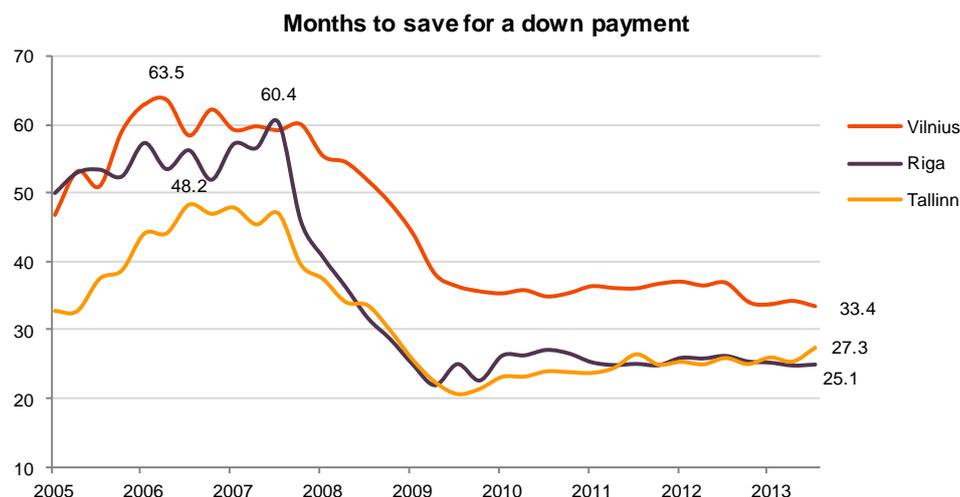
Net wages of households in Vilnius need to be at least EUR 675 to meet the norm of affordability (defined above). This requirement for household net wages is higher in Tallinn - EUR 832 - because of higher prices and interest rates. Meanwhile, households in Riga, which enjoy the lowest apartment prices, have to earn only EUR 555 to afford an apartment.

Compared with a year ago, the income margin when purchasing an apartment – or the HAI value – widened by 17.6 points in Vilnius. Higher wages, lower interest rates, and lower apartment prices all contributed to rising affordability. The income margins increased by 6.4 points in Riga, but decreased by 9.4 in Tallinn. Affordability was supported by rising wages in these two cities (9.2% in Tallinn and 6.0% in Riga). However, apartment prices in Tallinn increased by 15.6% compared with an 0.9% rise in Latvia.

### 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, shrank by three weeks in Vilnius to 33.4 months. In Riga, it increased by half a week to 25.1 months, and in Tallinn by nine weeks to 27.3 months, from the second to the third quarter of this year. This was because, unlike in Lithuania, apartment prices in a quarter rose faster than wages in Tallinn and Riga.

It is assumed that a household saves 30% of its net wages every month 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 still be affordable in all three cities. The affordability margin would decrease by 21.8 points in Vilnius, by 26.4 points in Riga, and by 25.6 points in Tallinn to 108.9, 132.0, and 128.2, respectively.

The margins would disappear in each of the three Baltic capitals if apartment prices were to increase by more than 30.6% in Vilnius, by 58.4% in Riga, and by 53.9% 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 2.2 percentage points in Vilnius, more than 4.2 percentage points in Riga, and more than 3.7 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 that, 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	102.6	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	36.1
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	148.8	131.3	25.9	25.3	33.8
2013 Q2	165.5	158.8	128.9	25.3	24.9	34.2
2013 Q3	153.9	158.4	130.6	27.3	25.1	33.4
High	179.5	158.8	131.3	48.2	60.4	63.5
Low	62.6	47.4	48.5	20.6	22.0	33.4
Average	125.7	108.1	84.2	31.5	36.2	45.4

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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