

## Housing market developments – 4th quarter 2019

### Strong house price growth outside the Randstad

Average house prices increased in the province of Groningen with 9.2% year on year. The municipalities Zuidhorn, Haren and Leek are currently registering the fastest growth of all the municipalities in the Netherlands with 10.2%. The two largest cities, Amsterdam and Rotterdam, show average house price increases of respectively 1.7% and 9.8%. The Hague and Utrecht show average house price increases of respectively 7.7% and 5.0.

### Transactions remain stable and number of homes for sale drops

The annual number of sales increased in five years from 137 thousand to 266 thousand houses. The number of homes for sale continues to decline. The ratio between the number of sales and supply has reached a factor 0.3 (sales > supply).

### Housing affordability remains stable

On average, 15.9% of net household income was required to service housing costs, in 2008 the housing affordability peaked with 27.0%. The relatively good affordability is mainly the result of the current low mortgage interest.

#### CALCASA INDEXES 2019 Q4

Calcasa House Price Index (WOX) (1995Q1=100)	335
Calcasa WOX Top 15 Cities Index (1995Q1=100)	395

#### Residential price change

WOX price change (year-on-year)	6.5%
WOX price change (quarter-on-quarter)	0.9%
WOX price change corrected for inflation (year-on-year)	3.8%

#### House price forecast

Yearly price change 2020 Q1	6.4%
Quarterly price change 2020 Q1	2.1%

#### Housing affordability

Affordability index	15.9%
Yearly change in housing affordability	-3.1%
Quarterly change in housing affordability	-6.5%

#### Transactions

Number of transactions on a yearly basis (x 1,000)	266
Yearly change in the number of transactions	0.5%
Quarterly change in the number of transactions	0.2%

\*Housing stock January 1<sup>st</sup>, 2019, municipal reclassification 2018

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#### Table 1

Calcasa key numbers Q4 2019  
Source: WOX Monitor Calcasa

## Average house price keeps rising

- The WOX (1995 = 100) currently stands at 335 points.
- Average house price: 328 thousand euro.
  - » Q-O-Q price development: +0.9%.
  - » Y-O-Y price development: +6.5%.
- The current Dutch inflation rate is 2.7% (which is the average rate for Q4 2019 according to Statistics Netherlands). In the fourth quarter of 2019, inflation-adjusted house prices rose by 3.8% y-o-y.

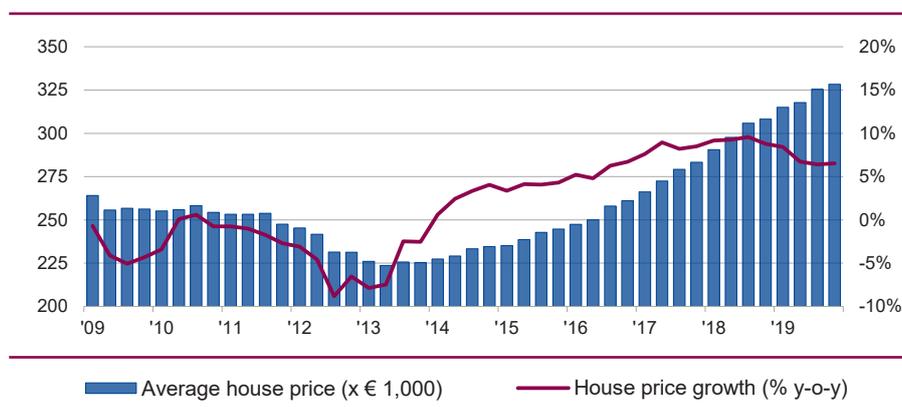


Figure 1

Average house price (x EUR1,000) and yearly price change per quarter in the Netherlands.  
Source: WOX Monitor Calcasa

- Average price of a single-family house: 344 thousand euro.
  - » Q-O-Q price development of single-family houses: +0.9%.
  - » Y-O-Y price development of single-family houses: +6.5%.
- Average price for apartments: 287 thousand euro.
  - » Q-O-Q price development of apartments: +0.9%.
  - » Y-O-Y price development of apartments: +6.6%.

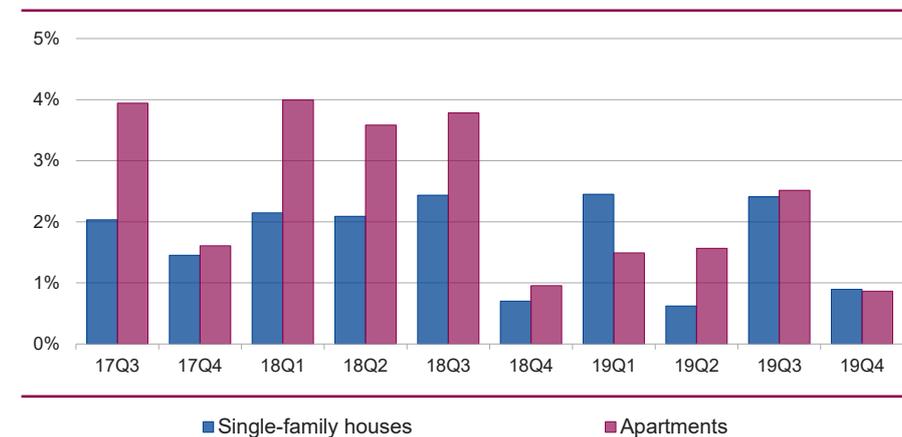


Figure 2

Q-O-Q price change per housing type in the Netherlands.  
Source: WOX Monitor Calcasa

## Highest price increase for less than 150,000 euro class

- Based on house price levels, Calcasa has divided the market into five price classes. Homes in the price class less than 150 thousand euros performed best with an annual average house price rise of 9.4%.
- The most expensive houses - worth 500k or more - increased the least in value; over the past year these homes increased in value by 4.1%.

Price class (euro)	Price development y-o-y
Less than 150,000	9.4%
150,000 to 250,000	8.1%
250,000 to 350,000	6.4%
350,000 to 500,000	5.4%
More than 500,000	4.1%
<b>All residential properties</b>	<b>6.5%</b>

## Older apartments show biggest price increase

- The value of terraced/corner houses saw the biggest price growth in the past year; their average price rose by 6.9%.
- Apartments built between 1945 and 1979 are registering the fastest growth. Their value increased by 8.8% in the past year.

Development (y-o-y)	Construction year				Total
	<1944	1945-1979	>1980	>2000	
(semi) detached	6.4%	5.7%	6.1%	5.8%	6.0%
Terraced/corner house	6.9%	6.7%	6.8%	7.4%	6.9%
Apartment	4.3%	8.8%	6.2%	7.3%	6.6%
<b>Total</b>	<b>5.6%</b>	<b>7.1%</b>	<b>6.4%</b>	<b>7.0%</b>	<b>6.5%</b>

## Forecast house price development in Q1 2020

- Q-O-Q price change: +2.1%.
- Y-O-Y price change: 6.4% (Q1 2019 - Q1 2020).
  - » Y-O-Y price change single-family homes: 6.1%.
  - » Y-O-Y price change apartments: 7.3%.

Calcasa publishes region-specific house price forecasts for four specific areas of the Netherlands, reflecting the diversity and variety displayed across the region.

- Western part: 6.6%
- Northern part: 6.6%
- Eastern part: 6.2%
- Southern part: 6.3%

Table 2a

Netherlands - price development per price class and transaction distribution over the last year.

Source: Calcasa

Table 2b

Netherlands - annual price development per construction year and housing type.

Source: Calcasa

## Strong house price growth outside the Randstad

- Average house prices increased the most in the province of Groningen, with an annual increase of 9.2% in value.
- Apartments in South-Holland and Limburg are in demand, with values going up by 9.6% and 9.4% respectively.
- The lowest price increase was measured for houses in the provinces of North-Holland (4.4%) and Friesland (6.1%).

Q4 2019	Average price	Average price	Price change
	single-family houses	apartments	(year-on-year)
Groningen	237,000	219,000	9.2%
Friesland	235,000	202,000	6.1%
Drenthe	263,000	214,000	7.6%
Overijssel	272,000	196,000	6.1%
Flevoland	288,000	281,000	7.6%
Gelderland	335,000	231,000	6.9%
Utrecht	469,000	306,000	6.1%
North-Holland	444,000	408,000	4.4%
South-Holland	385,000	263,000	7.9%
Zeeland	247,000	228,000	8.1%
North-Brabant	345,000	257,000	6.5%
Limburg	262,000	196,000	8.3%
<b>The Netherlands</b>	<b>344,000</b>	<b>287,000</b>	<b>6.5%</b>

Table 3

Average price and y-o-y price development on province level  
Source: WOX Monitor Calcasa

## Oost-Groningen fastest growing region

- The largest annual price increase of 9.5% is measured for houses in the NUTS III region of Oost-Groningen. In this region the value of single-family homes rose by 9.6% and the value of apartments by 7.8%.
- Second-largest annual price increase is seen in the NUTS III region Noord-Limburg with an annual growth rate of 9.5%, here the value of single-family homes rose by 9.5% and the value of apartments by 9.0%.
- The NUTS III regions with the smallest price increases are Groot-Amsterdam (2.4%) and Gooi en Vechtstreek (4.7%).
- In 9 of the 40 NUTS III regions the annual increase for houses prices is more than 8%.

## Housing affordability

On average, 15.9% of net household income was required to service housing costs in the fourth quarter of 2019, compared to mid-2008 when housing costs represented 27.0% of net income.

- Q-O-Q change in net housing costs: -6.5%.
- Y-O-Y change in net housing costs: -3.1%.

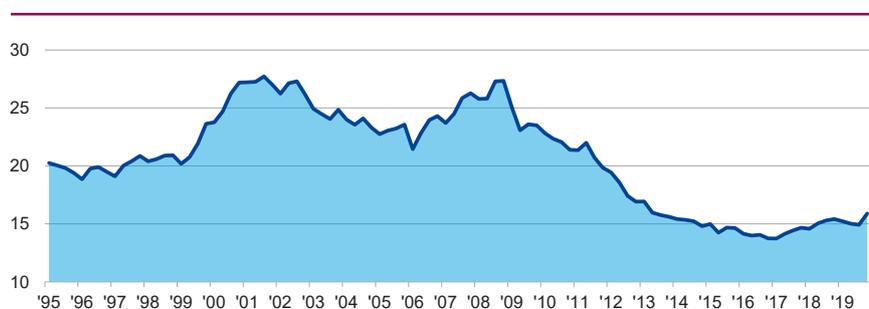


Figure 3

Housing affordability index\* (in % of household income) in the Netherlands.  
Source: WOX Monitor Calcasa

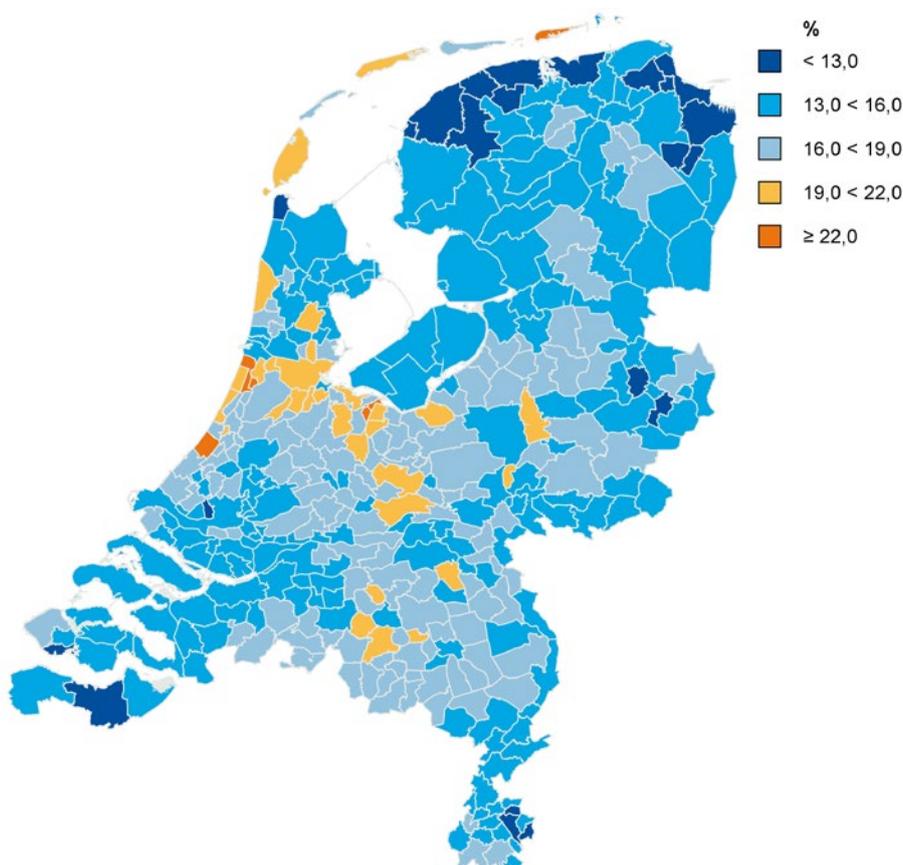


Figure 4

Affordability index per municipality (in %).  
Source: WOX Monitor Calcasa

\*The index measures the affordability of Dutch owner-occupied houses. It is calculated taking into account net housing costs, current average mortgage costs (current interest rate, maintenance costs, local taxes and fiscal treatment).

## Number of sales

The annual number of transactions has increased. 266 thousand residential properties were sold during the past year.

- Y-O-Y development, number of annual sales: +0.5%.
- Q-O-Q development, number of annual sales: +0.2%.

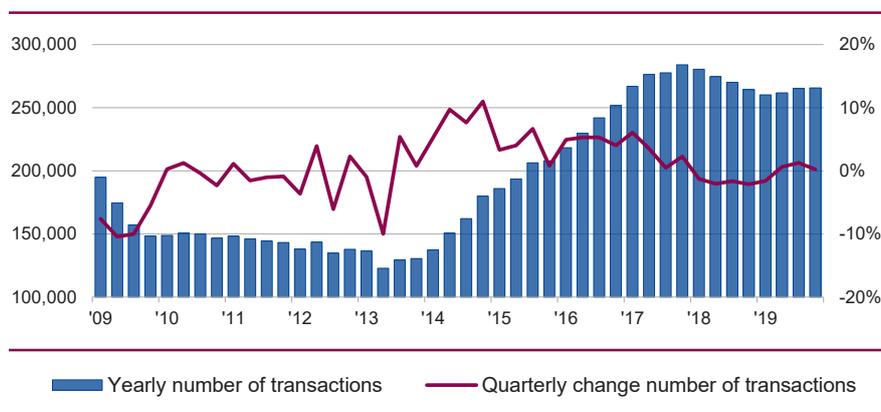


Figure 5

Number of annual sales\* and y-o-y change in number of sales in the Netherlands.  
Source: Statistics Netherlands, Land Registry, adaptation by Calcasa

\* Calcasa shows the number of housing sales on an annual basis for a reliable picture of the long term trend (corrected for seasonal effects).

## Apartment sales largest decline

- Transactions of corner houses and apartments decreased in the last quarter. Transactions of corner houses decreased with 0.7%.
- Apartments sales decreased the most this quarter with 4.2% year-on-year. This is partly caused by a shrinking supply of apartments.

### Transaction development y-o-y

Housing type	2018Q4	2019Q1	2019Q2	2019Q3	2019Q4
Detached	-2.6%	-1.7%	0.7%	2.8%	3.1%
Semi-detached	-6.3%	-5.0%	-0.6%	3.1%	6.2%
Corner house	-6.0%	-7.6%	-5.6%	-3.1%	-0.7%
Terraced house	-6.1%	-6.8%	-4.8%	-1.5%	1.3%
Apartment	-10.9%	-11.8%	-9.4%	-6.9%	-4.2%
<b>Total</b>	<b>-6.9%</b>	<b>-7.2%</b>	<b>-4.7%</b>	<b>-1.8%</b>	<b>0.5%</b>

Table 4

Y-o-y transaction development by period and property type  
Source: WOX Monitor Calcasa

## Sales in expensive price class increased

- The sale of homes in the price range 350 to 500 thousand euros increased by 18.5% in the past year, whilst homes above 500 thousand euros increased by 19.9%.
- Especially in the east (27.5%) and in the south (26.3%) of the Netherlands more expensive homes (>500 thousand euros) were sold.
- In the west the highest increase in sales was measured for houses in the price range 350 to 500 thousand euros (18.4%).
- The lowest price segment (75 to 150 thousand euros) decreased the most in the western part of the Netherlands by 37.1%.

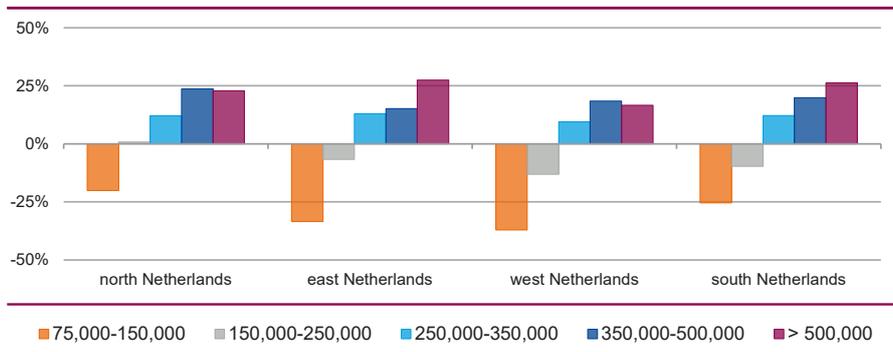


Figure 6

Growth (%) of share of housing sales per price class in North, East, West and South Netherlands in Q4 2019 compared to Q4 2018.

Source: WOX Monitor Calcasa

## 34% of housing sales within 150 to 250 thousand euros

- In the past year 34% of housing sales were within the price class of 150 to 250 thousand euros.
- The percentage of transactions in the price class 75 to 150 thousand euros decreased in four years time from 23% to 9%.
- The price segment 350 to 500 thousand euros increased in four years time from 9% to 18%.
- 12% of housing sales were within the price class of 500 thousand euros or more. Four years ago this was 5%.

Share of housing sales per price class

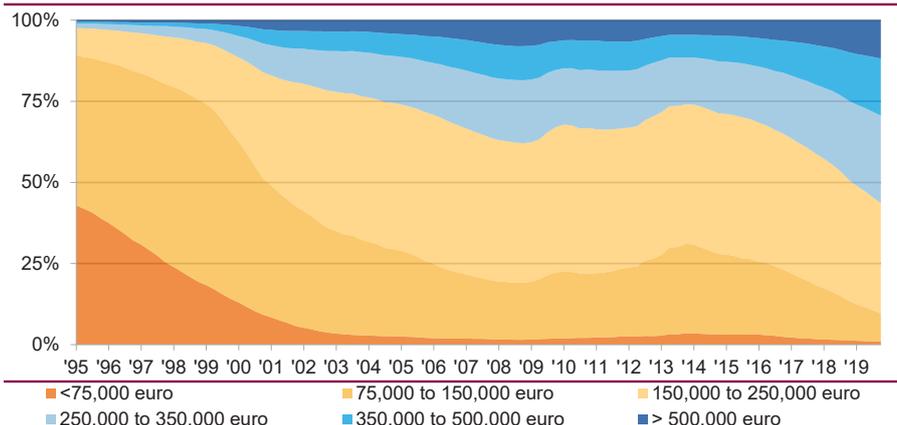


Figure 7

Share of housing sales per price class  
Source: WOX Monitor Calcasa

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## Groot-Amsterdam highest market liquidity

- In the NUTS III region Groot-Amsterdam 7.1% of the housing supply was sold during the past year. The regions of The Hague and Overig Groningen follow with 6.9% and 6.7% respectively.
- The NUTS III region Noord-Limburg had the lowest market liquidity: 4.9%.

NUTS III region	Percentage	NUTS III region	Percentage
	of housing supply sold last year		of housing supply sold last year
Groot-Amsterdam	7.1%	Noord-Limburg	4.9%
Agglomeratie 's-Gravenhage	6.9%	IJmond	5.1%
Overig Groningen	6.7%	Midden-Limburg	5.2%
Groot-Rijnmond	6.7%	Twente	5.4%
Zuidwest-Drenthe	6.6%	Leiden en Bollenstreek	5.4%
Flevoland	6.6%	Zuid-Limburg	5.4%
Oost-Groningen	6.5%	Delft en Westland	5.5%
Zuidoost-Drenthe	6.4%	Achterhoek	5.6%
Overig Zeeland	6.4%	Alkmaar en omgeving	5.6%
Veluwe	6.3%	Oost-Zuid-Holland	5.6%

Table 5

Top 10 NUTS III regions with highest and lowest percentage of housing supply sold last year  
Source: WOX Monitor Calcasa

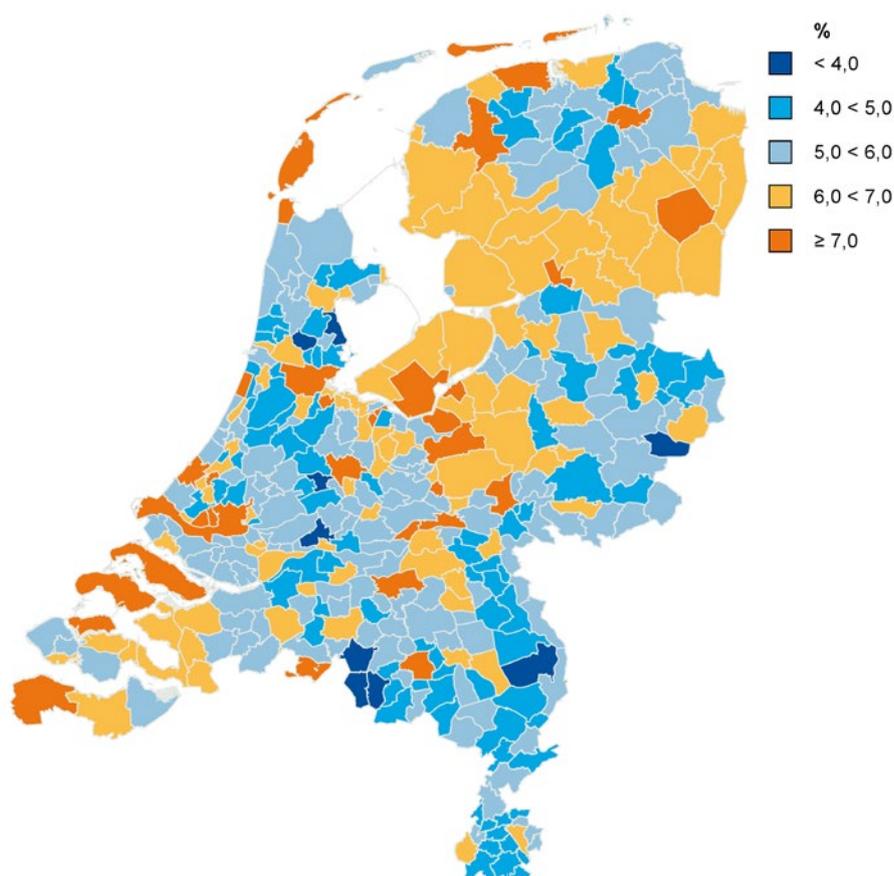


Figure 8

Market liquidity: sold homes as percentage of total number of owner occupied housing stock for previous year per municipality  
Source: WOX Monitor Calcasa

## Market liquidity: number of sales surpassed supply

- The annual ratio of houses for sale vs. sold has decreased to 0.3. This is an improvement compared to last year when this ratio was still 0.4.
- The annual number of houses sold: 266 thousand.
  - » Y-O-Y development: 0.5%
- Homes for sale in Q4 2019: 76 thousand
  - » Y-O-Y development: -24.6%
- The market liquidity is best in the municipality of Groningen with a factor of 0.15.
- In the municipality of Wassenaar the market liquidity is highest (worst) with a factor of 0.58, followed by the municipality of Edam-Volendam with a factor of 0.53.



Figure 9a

Annual number of properties for sale versus number of properties sold over the period 2013-2019 in the Netherlands. Source: Multiple real estate agents, adaptation Calcasa



Figure 9b

Annual number of properties for sale versus number of properties sold over the period 2013-2019 in the Randstad. Source: Multiple real estate agents, adaptation Calcasa

- The relationship between the supply of owner-occupied housing and total owner-occupied housing stock is also a component of market liquidity. The percentage of the total owner-occupied housing stock that sold last year is 6.0% for the Netherlands.
  - o The percentage of family homes sold previous year: 6.3%.
  - o The percentage of apartments sold previous year: 5.4%.
- The share of owner occupied housing stock which was sold last year is highest in the city of Groningen with 9.1%.
- In the municipality of Edam-Volendam only 3.1% of the existing stock of owner-occupied homes has changed owners.

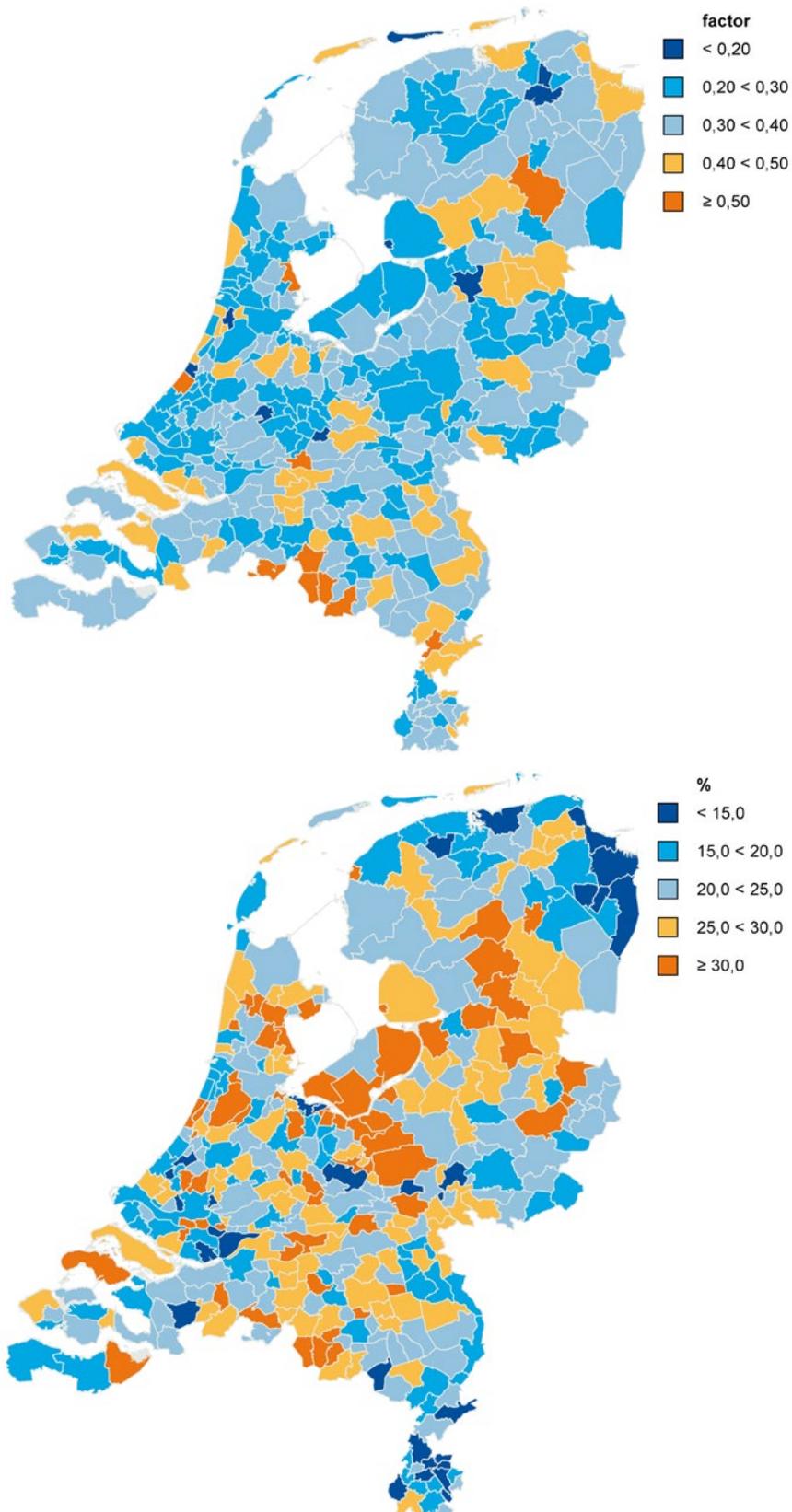


Figure 10

Supply/Sales ratio all properties per municipality

Source: WOX Monitor Calcasa

Figure 11

Percentage of properties with energy label A per municipality

Source: WOX Monitor Calcasa

## Mortgage approvals are decreasing

Approximately 320 thousand mortgages were approved last year.

- Y-O-Y development 2019Q3, number of annual mortgages: -9.7%.
- Q-O-Q development 2019Q3, number of annual mortgages: -1.1%.



Figure 12

Number of mortgages  
Source: Statistics Netherlands, Land Registry and adaptation Calcasa

## Number of foreclosures through auction decreases

Over the last four quarters, 498 foreclosures have been registered by the land registry.

- o Y-O-Y development amount of annual foreclosures: -28.2%.
- o Q-O-Q development amount of annual foreclosures: -5.3%.
- The share of foreclosure sales versus total sales is 0.2%.
- The highest share of foreclosure sales to total sales is 1.8% in the municipality of Nederweert.
- 201 municipalities had no foreclosure sales in the past year. The largest municipality without foreclosure sales is Meierijstad.

Note that many foreclosed properties will be sold via the public market and not via auction. The reason is that proceeds of a sale of a home through a forced auction can be up to 40 percent less compared to a sale via the public market.

*Due to the increase in the number of foreclosures after the crisis, the NHG has come up with stricter regulations allowing banks to only sell homes via auction if the selling price is less than 5% below market value. This is to avoid big losses.*

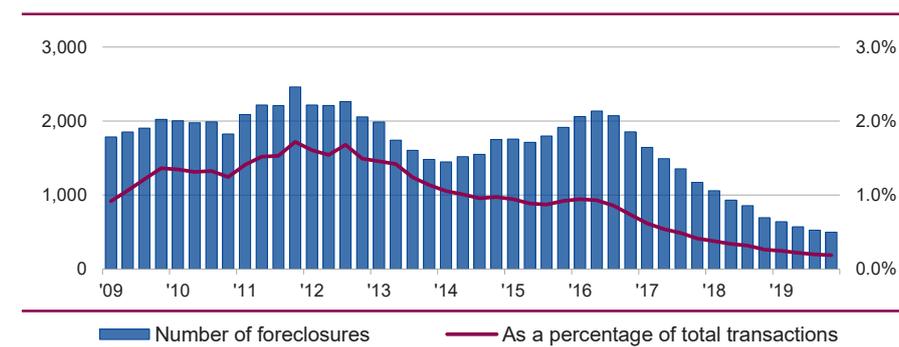


Figure 13

Number of yearly foreclosures and amount of foreclosures as a % of the total number of transactions in the Netherlands.  
Source: Statistics Netherlands, Land Registry and adaptation Calcasa

## Average price newly built homes increased by 6% y-o-y

- In the third quarter of 2018 the total amount of sales for newly built homes was 6 thousand. This is a decrease of 8.5% year-on-year.
- During the thirteenth quarter of 2019 the average price for newly built houses was 387 thousand euros. This is an increase of 6.3% compared to a year ago.

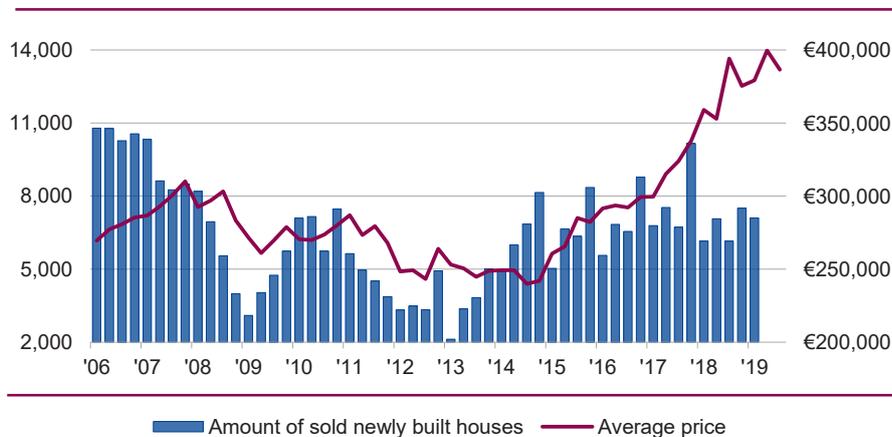


Figure 14

Average sales price for newly built houses per quarter in the Netherlands compared to the quarterly amount of newly built houses sold.

Source: CBS

## Amount of households in arrears decreased

- Since 2015 the number of homeowners with payment problems decreased with 38%.
- Currently there are 70 thousand homeowners who have difficulty paying their mortgage: this is a decrease of 12.5% compared to a year ago.

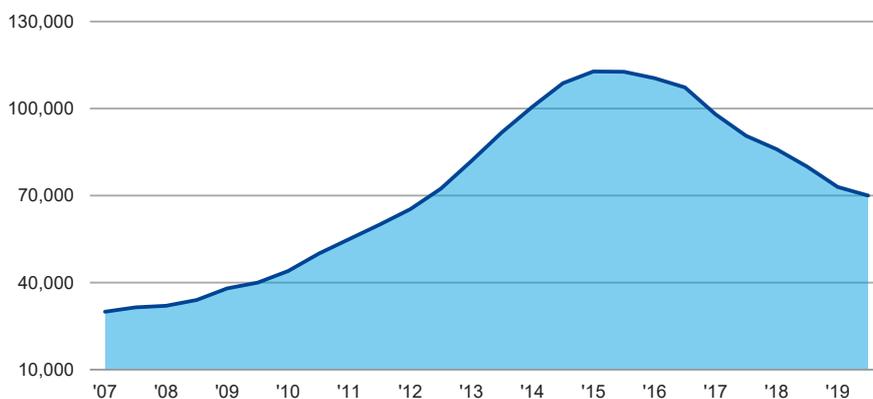


Figure 15

Number of borrowers with mortgage payment arrears

Source: BKR

## Office rental prices increased by 14% in three years

### The average office rental price increased by 4.1% y-o-y in 4Q2019

The Calcasa PropertyNL OPI (Office Price Index) showed a value of 100 (4Q2001=100) for the fourth quarter of 2019. The average office rental value is now EUR134 per square meter.

### The average retail rental price increased by 3.9% y-o-y in 4Q2019

The Calcasa PropertyNL RPI (Retail Price Index) showed a value of 100 (4Q2001=100) for the fourth quarter of 2019. Compared to the fourth quarter of 2018, this is an increase of 3.9%. The average retail rental value is now EUR155 per square meter.

### The average industrial rental price increased by 2.8% y-o-y in 4Q2019

The Calcasa PropertyNL IPI (Industrial Price Index) showed a value of 106 (4Q2001=100) for the fourth quarter of 2019, an increase of 2.8% compared to the fourth quarter of 2018. The average industrial rental value is now EUR63 per square meter.

The three real estate indices are based entirely on actual transactions and not on appraisals from professionals. The actual situation for the rental income may even be grimmer: in the actual rents any incentives given by the owner are not included.

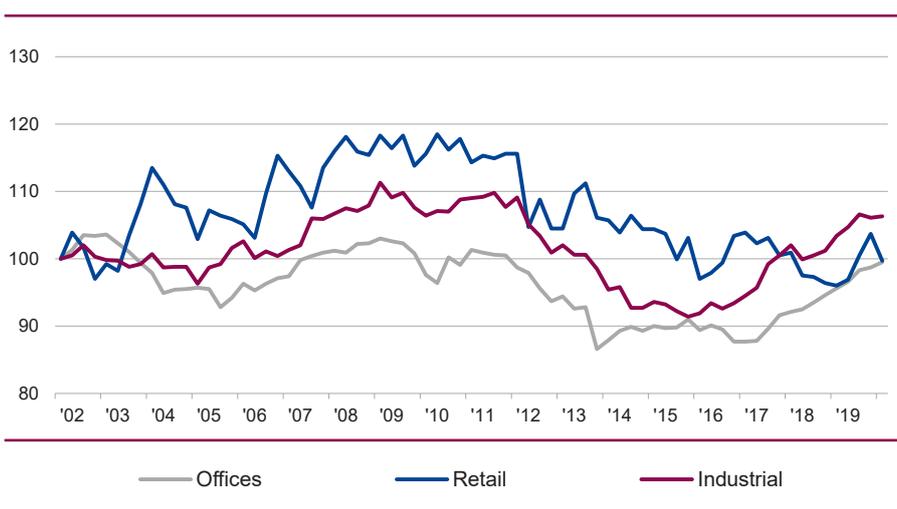


Figure 16

Development of Calcasa commercial real estate indexes (Q4 2001 = 100)  
Source: Calcasa

Netherlands	Index (Q4 2001=100)	Average rent per m2	Y-O-Y price change	Three year price change
Offices (OPI)	100	€ 134	4.1%	13.5%
Retail (RPI)	100	€ 155	3.9%	-4.0%
Industrial (IPI)	106	€ 63	2.8%	12.5%

Table 6

Development of rental values of commercial real estate in the Netherlands  
Source: Calcasa, PropertyNL

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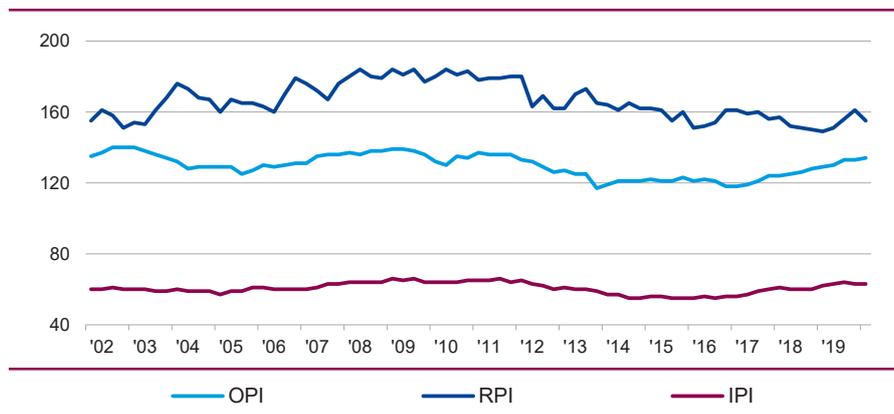


Figure 17

Development of Calcasa commercial real estate indexes (2001Q4 = 100)  
Source: Calcasa, PropertyNL

## Commercial real estate index: A scientifically justified methodology

Calcasa calculates price developments for commercial real estate by using realized rental transactions which have been gathered and checked by the research department of PropertyNL. Calcasa translates the rental transactions to determine a value for the entire stock of commercial real estate, using a hedonic modeling technique. A revaluation of the entire stock takes place each quarter and hence a more accurate and robust index is formed, capturing the developments in the commercial real estate market.

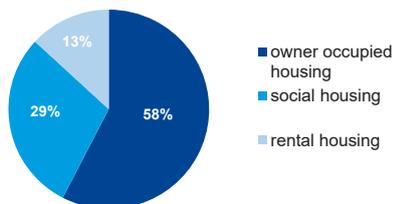
With the application of the hedonic method, it is essential that objects and their location are documented precisely, using the characteristics that influence the price. Hence, when using a hedonic index model, a range of object characteristics are taken into account, e.g. living area and year of construction.

It is equally important that multiple variables are included in the model, which describe the location of the object; an example of such variables would be distance to important amenities like city centers, airports, train stations and motorways. Using this methodology, Calcasa produces a quarterly index for the office market (with minimal space of 200 square meters), which is published in PropertyNL and the Calcasa WOX quarterly bulletin.

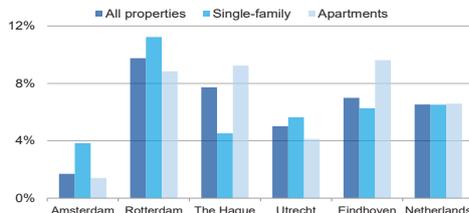
## Dutch Housing Market Summary

	Largest cities	All properties	Singles-family	Apartments	Owner occupied	Rental	Total population	Total households	Annual sales	Current supply
Amsterdam	433,000	62,000	371,000	30%	70%	854,050	467,610	11,815		
Rotterdam	311,000	87,000	225,000	34%	64%	638,710	321,690	8,794		
The Hague	257,000	59,000	198,000	42%	56%	532,560	260,890	8,192		
Utrecht	151,000	68,000	83,000	45%	54%	347,480	178,190	5,370		
Groningen	101,000	37,000	64,000	38%	61%	202,810	122,540	3,493		
Eindhoven	109,000	68,000	42,000	45%	54%	229,130	118,270	3,690		
<b>Provinces</b>										
Groningen	277,000	184,000	93,000	55%	44%	582,940	292,260	9,995	2,750	
Friesland	298,000	244,000	55,000	61%	37%	647,270	290,340	11,178	3,335	
Drenthe	221,000	183,000	38,000	65%	33%	492,100	216,370	8,886	2,780	
Overijssel	500,000	385,000	115,000	60%	38%	1,151,500	499,030	16,958	4,769	
Flevoland	166,000	132,000	35,000	64%	35%	411,670	170,800	7,004	1,776	
Gelderland	894,000	676,000	218,000	60%	39%	2,060,100	914,370	32,037	9,592	
Utrecht	558,000	355,000	203,000	57%	42%	1,295,480	584,260	19,604	5,087	
North-Holland	1,318,000	669,000	650,000	50%	49%	2,831,180	1,352,240	42,556	11,267	
South-Holland	1,678,000	833,000	845,000	51%	48%	3,681,040	1,701,660	54,030	14,545	
Zeeland	185,000	151,000	34,000	65%	34%	382,300	173,950	7,647	2,436	
North-Brabant	1,116,000	847,000	269,000	61%	38%	2,528,290	1,134,720	39,330	12,128	
Limburg	529,000	391,000	138,000	60%	39%	1,117,200	527,920	16,471	5,434	
<b>Netherlands</b>	<b>7,741,000</b>	<b>5,043,000</b>	<b>2,697,000</b>	<b>57%</b>	<b>42%</b>	<b>17,181,080</b>	<b>7,857,910</b>	<b>265,696</b>	<b>75,898</b>	

### Housing stock



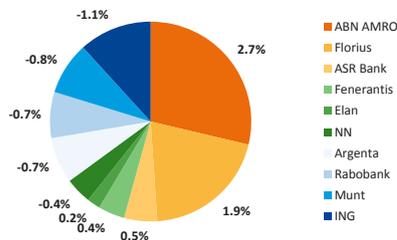
### Y-O-Y price development largest cities



### Mortgage developments

	Amount	Change
Sales with NHG	24,200	8.0%
Execution sales with losses	92	-47.1%
Households in arrears	70,000	-12.5%
Sold mortgages	319,856	-9.7%
Total mortgage debt	723B	1.3%

### Top mortgage lenders: increase/decrease market share



### Macro-economic figures

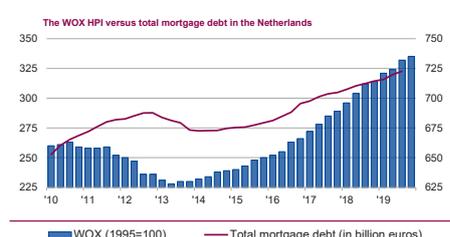
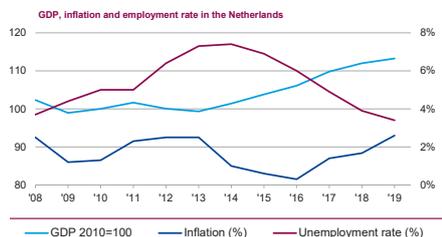


Table 7

Key figures for the Dutch housing market  
Source: Statistics Netherlands, Land Registry

Figures 18 & 19

Source figure left: Statistics Netherlands  
Source figure right: Calcasa

Table 8 & Figure 20

Source table left: Statistics Netherlands, NHG, BKR, Land Registry  
Source figure right: Calcasa, IG&H

Figures 21 & 22

Source figure left: DNB, Statistics Netherlands  
Source figure right: Calcasa, Statistics Netherlands

## Appendices

Provinces	Detached houses	Semi-detached	Corner houses	Terraced houses	All single-family dwellings
Groningen	267,000	221,000	195,000	197,000	237,000
Friesland	304,000	224,000	187,000	172,000	235,000
Drenthe	345,000	242,000	198,000	182,000	263,000
Overijssel	396,000	263,000	231,000	217,000	272,000
Flevoland	503,000	324,000	252,000	237,000	288,000
Gelderland	466,000	321,000	270,000	243,000	335,000
Utrecht	767,000	523,000	384,000	360,000	469,000
North-Holland	593,000	484,000	378,000	345,000	444,000
South-Holland	590,000	447,000	341,000	318,000	385,000
Zeeland	339,000	234,000	199,000	188,000	247,000
North-Brabant	503,000	338,000	285,000	263,000	345,000
Limburg	372,000	241,000	221,000	211,000	262,000
<b>Netherlands</b>	<b>448,000</b>	<b>330,000</b>	<b>295,000</b>	<b>281,000</b>	<b>344,000</b>

Table 9

Average house price for single-family dwellings, per property type and per province in the Netherlands (in euros).  
Source: Calcasa

Provinces	Porch flat	Gallery flat	Maison-nette	Up/downstairs apartment	All apartments
Groningen	202,000	179,000	195,000	207,000	219,000
Friesland	200,000	168,000	175,000	182,000	202,000
Drenthe	203,000	178,000	179,000	208,000	214,000
Overijssel	186,000	185,000	202,000	200,000	196,000
Flevoland	259,000	215,000	231,000	210,000	281,000
Gelderland	222,000	195,000	216,000	241,000	231,000
Utrecht	288,000	253,000	300,000	313,000	306,000
North-Holland	303,000	280,000	362,000	392,000	408,000
South-Holland	231,000	222,000	261,000	265,000	263,000
Zeeland	239,000	247,000	190,000	204,000	228,000
North-Brabant	251,000	218,000	240,000	252,000	257,000
Limburg	190,000	169,000	195,000	195,000	196,000
<b>Netherlands</b>	<b>243,000</b>	<b>225,000</b>	<b>269,000</b>	<b>299,000</b>	<b>287,000</b>

Table 10

Average house price for apartments, per property type and per province in the Netherlands (in euros).  
Source: Calcasa

Municipalities	Highest	Municipalities	Lowest
	property values (x 1,000)		property values (x 1,000)
Bloemendaal	903	Delfzijl	169
Wassenaar	696	Oldambt	179
Heemstede	671	Veendam	189
Gooise Meren	533	Heerlen	190
De Bilt	524	Kerkrade	193
Zeist	493	Brunssum	193
Wijdmeren	489	Terneuzen	199
Bergen (NH.)	489	Leeuwarden	200
Amstelveen	483	Den Helder	202
Utrechtse Heuvelrug	483	Stadskanaal	204

Table 11

Top 10 highest and lowest property values, per municipality containing over 5,000 owner-occupied dwellings.  
Source: Calcasa

Municipalities	Highest	Municipalities	Lowest
	annual price development		annual price development
Zuidhorn	10.2%	Amsterdam	1.7%
Haren	10.2%	Amstelveen	2.8%
Leek	10.2%	Diemen	2.8%
Rotterdam	9.8%	Purmerend	3.3%
Veendam	9.7%	Uithoorn	3.6%
Oldambt	9.7%	Haarlemmermeer	3.7%
Venray	9.6%	Edam-Volendam	3.8%
Venlo	9.5%	Wijdmeren	4.1%
Midden-Groningen	9.5%	Huizen	4.1%
Westerwolde	9.5%	Aalsmeer	4.1%

Table 12

Top 10 highest and lowest price developments, per municipality with over 5,000 owner-occupied dwellings.  
Source: Calcasa

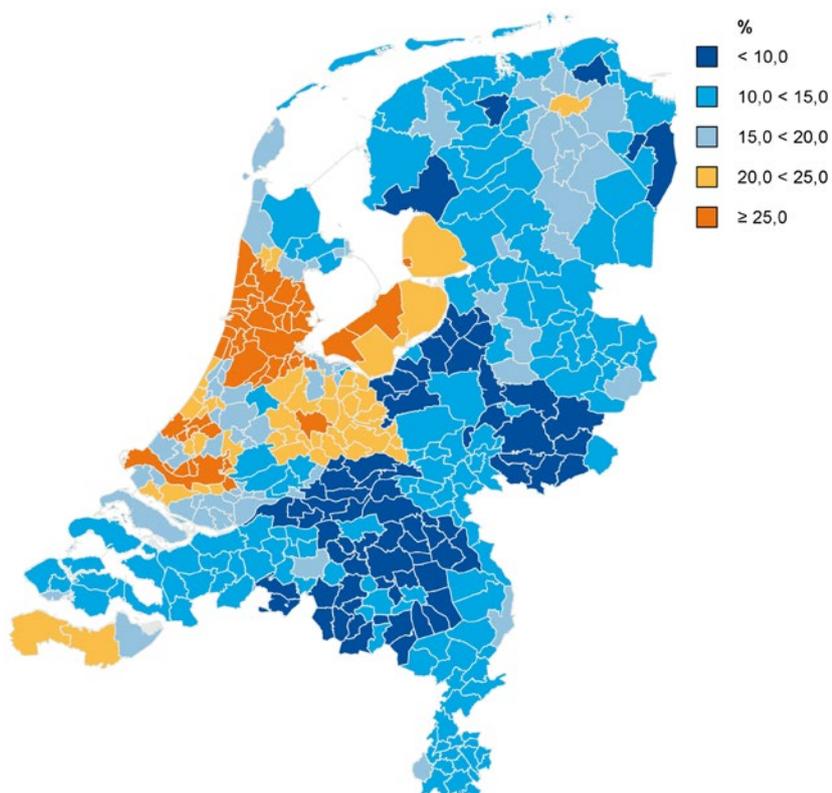


Figure 23

The price development of all houses per municipality in 2019Q4 compared to 2008Q3  
Source: Calcasa

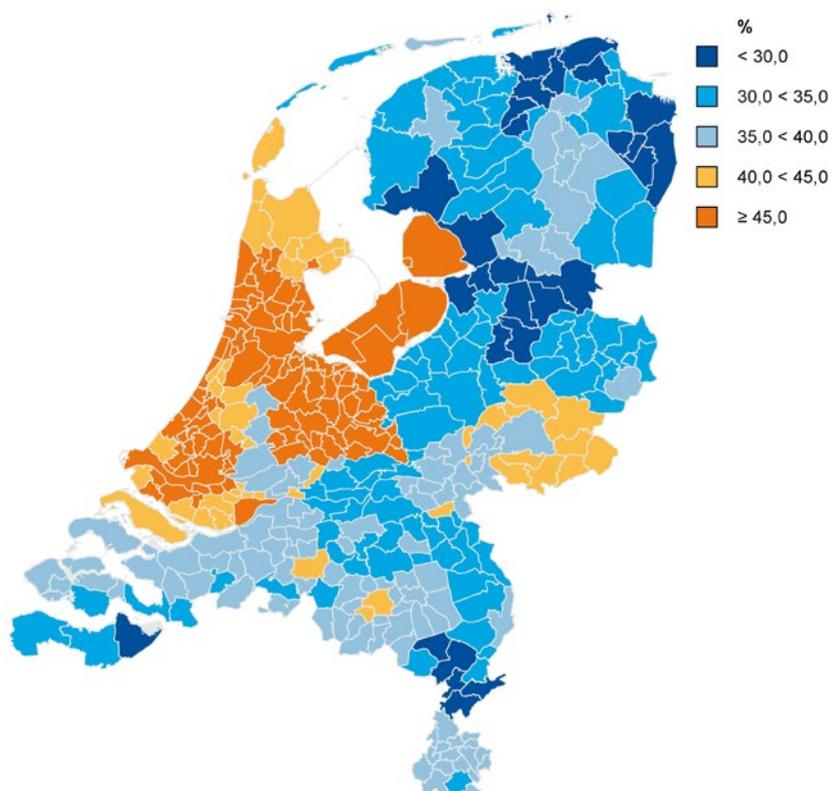
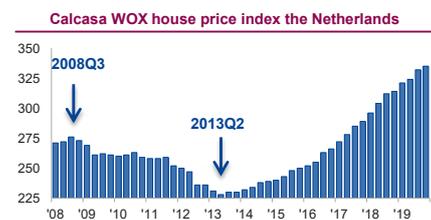


Figure 24

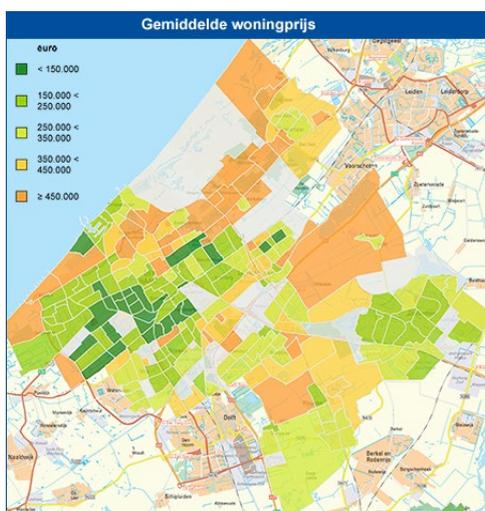
The price development of all houses per municipality in 2019Q4 compared to 2013Q2  
Source: Calcasa



Visit [calcasa.co.uk](http://calcasa.co.uk) for more information

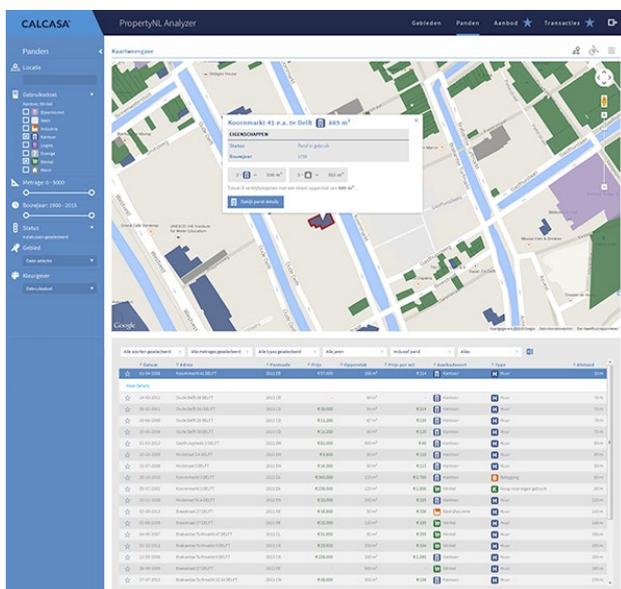
## The WOX Monitor: All housing market data for every neighborhood

More information on price developments in various regional levels (neighborhood, municipality, province) is available via the WOX monitor.



## Calcasa PropertyNL Analyzer

Analyzing the commercial real estate market is possible through the Calcasa PropertyNL Analyzer (“CPA”). CPA is an online application with information that is easily accessible for the office, retail and industrial markets. This tool increases the transparency in the property market. For more information contact Mr. Rogier van der Hijden: [Rogier@Calcasa.nl](mailto:Rogier@Calcasa.nl)



## About Calcasa

Calcasa is an independent technology company specializing in the statistical analysis and valuation of real estate. The Calcasa Automated Valuation Model (AVM) for valuation of individual homes is unique due to its high coverage and accuracy. It is internationally recognized by the three major rating agencies and regulators. Mortgage lenders, investors, intermediaries, validation institutes, housing corporations, consumer organizations, real estate companies, broker organizations, government agencies and regulators rely daily on the solutions Calcasa. [www.calcasa.co.uk](http://www.calcasa.co.uk)

## Calcasa WOX: A reliable house price index

Calcasa WOX is demonstrably the most reliable house price index in the Netherlands. Every quarter, Calcasa calculates a reliable house price index for each province, municipality, borough and neighborhood in the Netherlands. The house price index is calculated using the national data on transactions starting from 1993 and additional house and location characteristics from the database. The source data is screened for integrity, such that non-representative data is omitted for the index calculation. The developed methodology takes into account any over or under representation of sold properties, compared to the existing housing stock in that area. Unlike most house price indices, the Calcasa WOX does not simply calculate the coincidental development of sales for a specific area; rather it calculates the development of prices of the total housing stock.

## European AVM Alliance (EAA)

Calcasa is a founding member of the EEA which was launched as a pan-European initiative at the end of 2012. The mission is to promote and standardize the usage of AVM's resulting in a consistent approach to automated valuations in Europe. Other members include Hometrack (UK), Eiendomsverdi (Norway), Värderingsdata (Sweden), CRIF (Italy), Tinsa (Spain), On-Geo (Germany) and On-Geo (Austria).

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