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Housing market developments – 1st quarter 2019

Strong house price growth in the Randstad
Average house prices increased in the provinces of Flevoland and Zeeland with 11.9% and 10.6% year on year. The two largest cities, Amsterdam and Rotterdam, show average house price increases of respectively 7.6% and 10.9%. The Hague and Utrecht appear in the top 10 fastest growth of all the municipalities in the Netherlands with 12,4% and 12.8.

Transactions and number of homes for sale drops
The annual number of sales increased in five years from 123 thousand to 260 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) and in the urban agglomeration 'Randstad' this factor dropped to 0.3.

Housing affordability remains stable
On average, 15.5% of net household income was required to service housing costs, in 2008 this number was 27.0%.

Content WOX:

Table 1

Calcasa key numbers Q1 2019
Source: WOX Monitor Calcasa

CALCASA INDEXES 2019 Q1	
Calcasa House Price Index (WOX) (1995Q1=100)	329
Calcasa WOX Top 15 Cities Index (1995Q1=100)	388
Residential price change	
WOX price change (year-on-year)	8.9%
WOX price change (quarter-on-quarter)	2.2%
WOX price change corrected for inflation (year-on-year)	6.4%
House price forecast	
Yearly price change 2019 Q2	8.3%
Quarterly price change 2019 Q2	1.9%
Housing affordability	
Affordability index	15.5%
Yearly change in housing affordability	-4.8%
Quarterly change in housing affordability	1.2%
Transactions	
Number of transactions on a yearly basis (x 1,000)	260
Yearly change in the number of transactions	-7.2%
Quarterly change in the number of transactions	-1.6%

*Housing stock January 1st, 2019, municipal reclassification 2018

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Average house price keeps rising

- The WOX (1995 = 100) currently stands at 329 points.
- Average house price: 315 thousand euro.
  - » Q-O-Q price development: +2.2%.
  - » Y-O-Y price development: +8.9%.
- The current Dutch inflation rate is 2.5% (which is the average rate for Q1 2019 according to Statistics Netherlands). In the first quarter of 2019, inflation-adjusted house prices rose by 6.4% y-o-y.
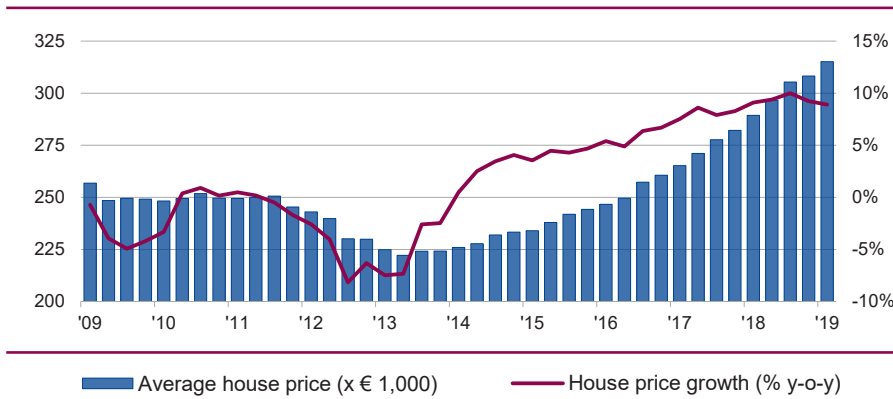

Figure 1

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: 331 thousand euro.
  - » Q-O-Q price development of single-family houses: +2.5%.
  - » Y-O-Y price development of single-family houses: +8.4%.

- Average price for apartments: 273 thousand euro.
  - » Q-O-Q price development of apartments: +1.4%.
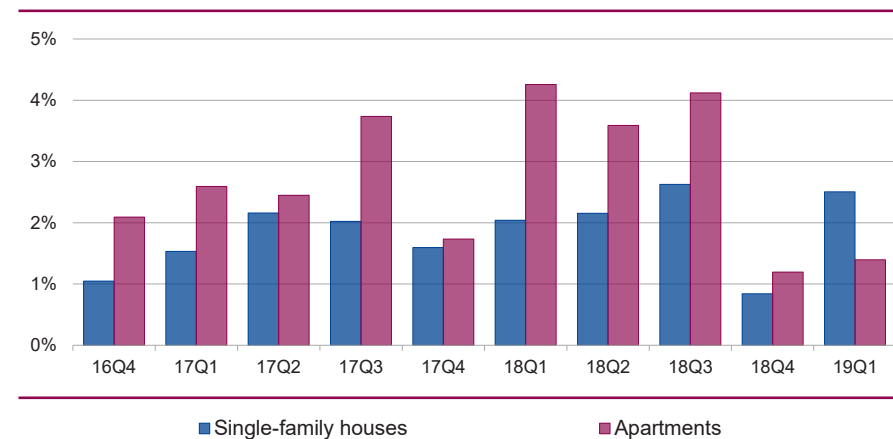 - » Y-O-Y price development of apartments: +10.7%.

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 11.6%.
- The most expensive houses - worth 500k or more - increased the least in value; over the past year these homes increased in value by 7.4%.

Price class (euro)	Price development y-o-y
Less than 150,000	11.6%
150,000 to 250,000	9.8%
250,000 to 350,000	8.8%
350,000 to 500,000	7.8%
More than 500,000	7.4%
All residential properties	**8.9%**

Table 2a

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

Older apartments show biggest price increase

- Again, the value of apartments saw the biggest price growth in the past year; their average price rose by 10.7%.
- Apartments built between 1945 and 1979 are registering the fastest growth. Their value increased by 13.0% in the past year.

Development (y-o-y)	Construction year				
Housing type	<1944	1945-1979	>1980	>2000	Total
(semi) detached	7.2%	7.1%	7.9%	7.6%	7.4%
Terraced/corner house	9.7%	8.5%	8.4%	10.1%	9.0%
Apartment	8.8%	13.0%	10.6%	10.5%	10.7%
Total	**8.7%**	**9.6%**	**8.9%**	**9.7%**	**8.9%**

Table 2b

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

Forecast house price development in Q2 2019

- Q-O-Q price change: +1.9%.
- Y-O-Y price change: 8.3% (Q2 2018 - Q2 2019).
    - » Y-O-Y price change single-family homes: 7.7%.
    - » Y-O-Y price change apartments: 10.0%.

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: 8.2%   Northern part: 7.6%
- Eastern part : 8.4%   Southern part: 8.9%

Strong house price growth around the Randstad

- Average house prices increased the most in the province of Flevoland, with an annual increase of 11.9% in value.
- Apartments in Gelderland and Zeeland are in demand, with values going up by 13.6% and 13.4% respectively.
- The lowest price increase was measured for houses in the provinces of Groningen (5.7%) and Drenthe (7.2%).

Q1 2019	Average price single-family houses	Average price apartments	Price change (year-on-year)
Groningen	228,000	210,000	5.7%
Friesland	227,000	192,000	7.8%
Drenthe	251,000	204,000	7.2%
Overijssel	262,000	186,000	8.7%
Flevoland	275,000	264,000	11.9%
Gelderland	320,000	223,000	8.0%
Utrecht	454,000	293,000	10.1%
North-Holland	431,000	397,000	8.6%
South-Holland	367,000	245,000	10.5%
Zeeland	238,000	215,000	10.6%
North-Brabant	332,000	243,000	7.8%
Limburg	251,000	185,000	7.4%
The Netherlands	**331,000**	**273,000**	**8.9%**

Table 3

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

Haarlem fastest growing region

- The largest annual price increase of 12.5% is measured for houses in the NUTS III region of Haarlem. In this region the value of single-family homes rose by 13.5% and the value of apartments by 9.9%.
- Second-largest annual price increase is seen in the NUTS III region Flevoland with an annual growth rate of 11.9%, here the value of single-family homes rose by 11.8% and the value of apartments by 12.9%.
- The NUTS III regions with the smallest price increases are Overig Groningen (5.5%) and Gooi en Vechtstreek (5.6%).
- In 9 of the 40 NUTS III regions the annual increase for houses prices is more than 10%.

Housing affordability increases slightly

On average, 15.5% of net household income was required to service housing costs in the first quarter of 2019, compared to mid-2008 when housing costs represented 27.0% of net income.

- Q-O-Q change in net housing costs: -1.2%.
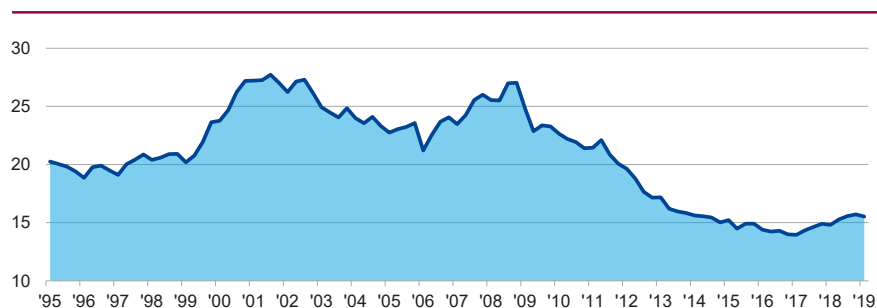- Y-O-Y change in net housing costs: +4.8%.

Figure 3

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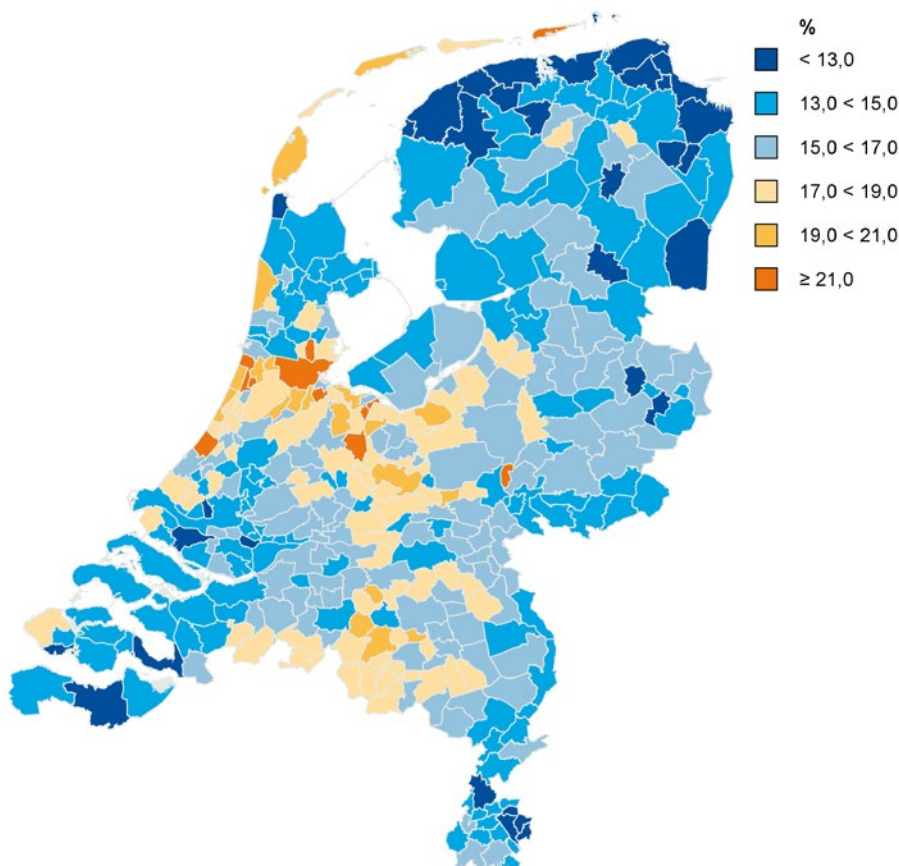Source: WOX Monitor Calcasa

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 decline

The annual number of transactions has decreased. 260 thousand residential properties were sold during the past year.

- Y-O-Y development, number of annual sales: -7.2%.
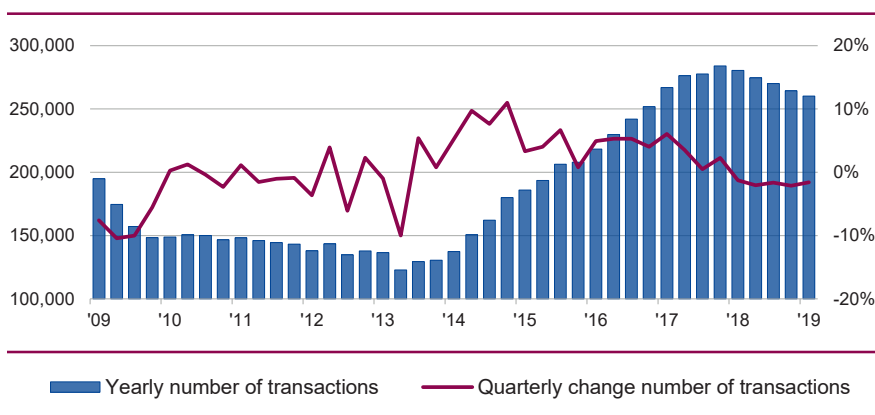- Q-O-Q development, number of annual sales: -1.6%.

Yearly number of transactions — Quarterly change number of transactions

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 all housing types decreased in the last quarter. Transactions of detached houses decreased the least with 1.8%.
- Apartments sales decreased the most this quarter with 11.8% year-on-year. This is partly caused by a shrinking supply of apartments.

Transaction development y-o-y

Housing type	2018Q1	2018Q2	2018Q3	2018Q4	2019Q1
Detached	11.1%	3.7%	1.8%	-2.6%	-1.8%
Semi-detached	5.4%	-0.8%	-2.1%	-6.3%	-5.0%
Corner house	9.0%	3.0%	0.3%	-5.9%	-7.6%
Terraced house	6.4%	1.0%	-1.5%	-6.1%	-6.7%
Apartment	-1.0%	-5.7%	-7.8%	-10.9%	-11.8%
Total	**5.0%**	**-0.6%**	**-2.7%**	**-6.9%**	**-7.2%**

Table 4

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

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Sales in expensive price class increased by 20%

- The sale of homes in the price range 350 to 500 thousand euros increased by 14.0% in the past year, whilst homes above 500 thousand euros increased by 19.8%.
- Especially in the east (36.4%) and in the north (29.6%) of the Netherlands more expensive homes (>500 thousand euros) were sold.
- In the western part of the Netherlands the highest increase in sales was measured for houses above 500 thousand euros (15.5%).
- The lowest price segment (75 to 150 thousand euros) decreased the most in the western part of the Netherlands by 44.5%.
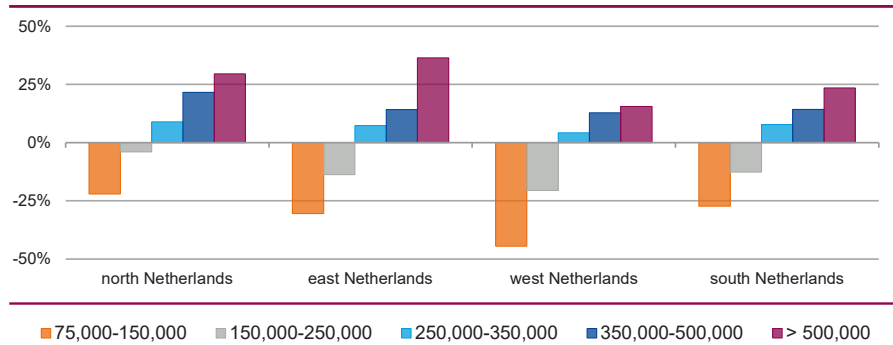

Figure 6

Growth (%) of share of housing sales per price class in North, East, West and South Netherlands in Q1 2019 compared to Q1 2018.
Source: WOX Monitor Calcasa

37% of housing sales within 150 to 250 thousand euros

- In the past year 37% 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 25% to 11%.
- The price segment 350 to 500 thousand euros increased in four years time from 8% to 16%.
- 10% of housing sales were within the price class of 500 thousand euros or more. Four years ago this was 5%.

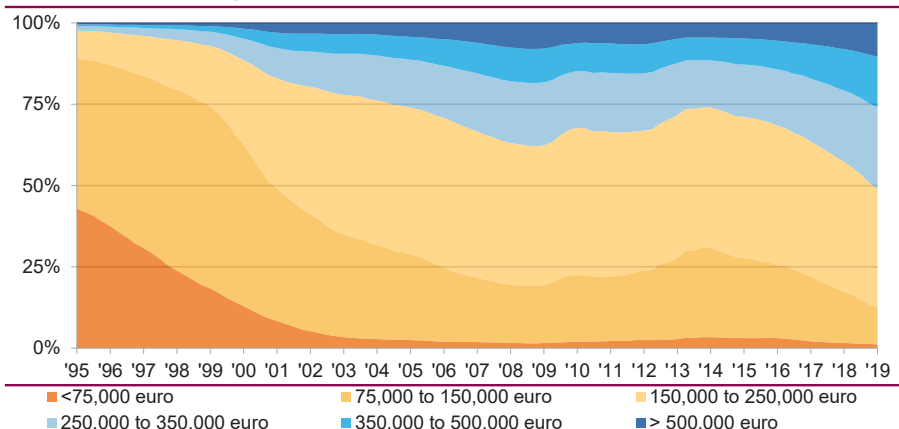**Figure 7**

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

Groot-Amsterdam highest market liquidity

- In the NUTS III region Groot-Amsterdam 6.9% of the housing supply was sold during the past year. The regions of The Hague and Overig Groningen follow with 6.8% and 6.7% respectively.
- The NUTS III region IJmond had the lowest market liquidity: 4.7%.

NUTS III region	Percentage of housing supply sold last year	NUTS III region	Percentage of housing supply sold last year
Groot-Amsterdam	6.9%	IJmond	4.7%
's-Gravenhage	6.8%	Noord-Limburg	4.9%
Overig Groningen	6.7%	Midden-Limburg	5.0%
Groot-Rijnmond	6.6%	Delft en Westland	5.1%
Zuidwest-Drenthe	6.5%	Delfzijl en omgeving	5.2%
Overig Zeeland	6.4%	Twente	5.2%
Agglomeratie Haarlem	6.3%	Achterhoek	5.2%
Zuidoost-Drenthe	6.1%	Leiden en Bollenstreek	5.2%
Noord-Overijssel	6.1%	Alkmaar en omgeving	5.3%
Het Gooi en Vechtstreek	6.1%	Zuid-Limburg	5.3%

Table 5

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

%
- < 4,0
- 4,0 < 5,5
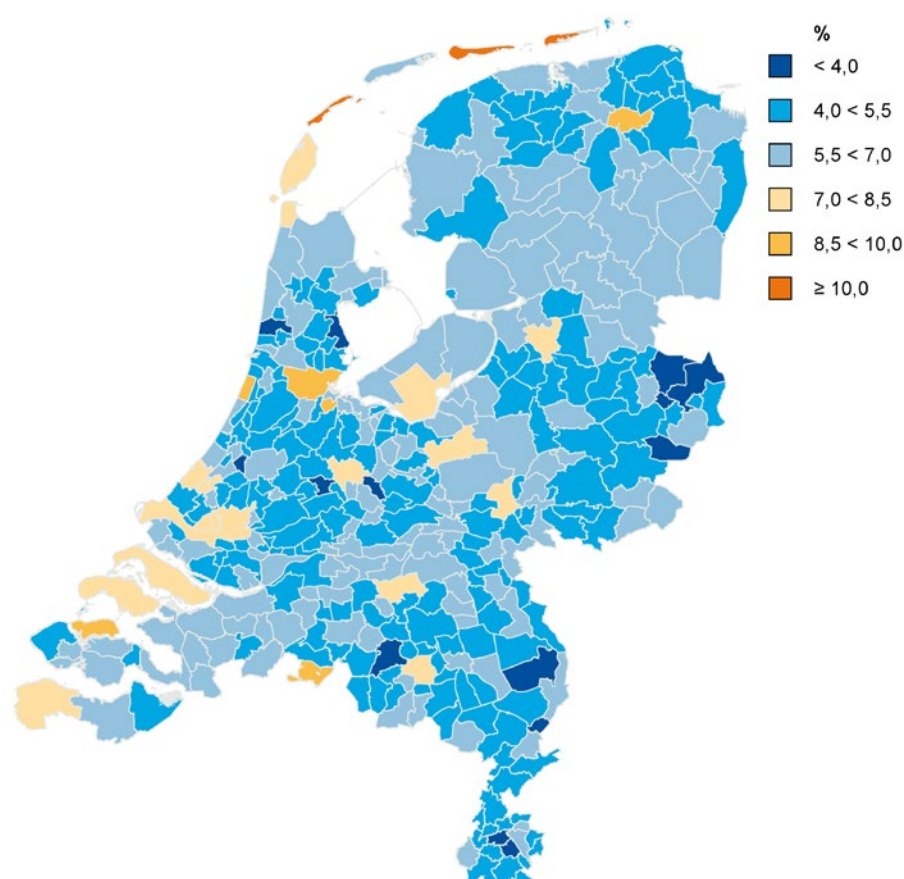- 5,5 < 7,0
- 7,0 < 8,5
- 8,5 < 10,0
- ≥ 10,0

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: 260 thousand.
  - » Y-O-Y development: -7.2%
- Homes for sale in Q1 2019: 87 thousand
  - » Y-O-Y development: -26.4%

- The market liquidity is best in the municipality of Groningen with a factor of 0.17.
- In the municipality of Montferland the market liquidity is highest (worst) with a factor of 0.69, followed by the municipality of Westerwolde with a factor of 0.68.
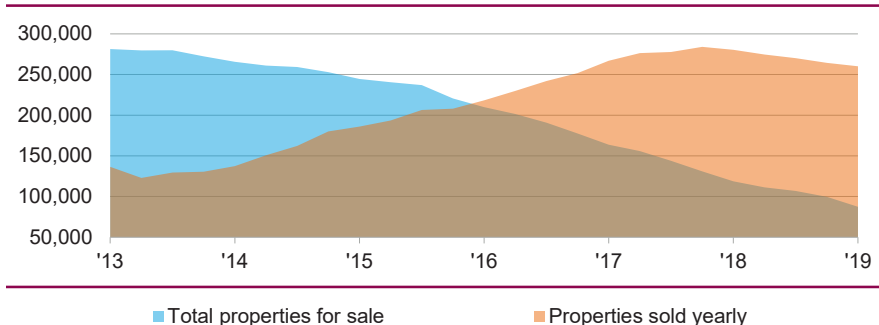
Figure 9a

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
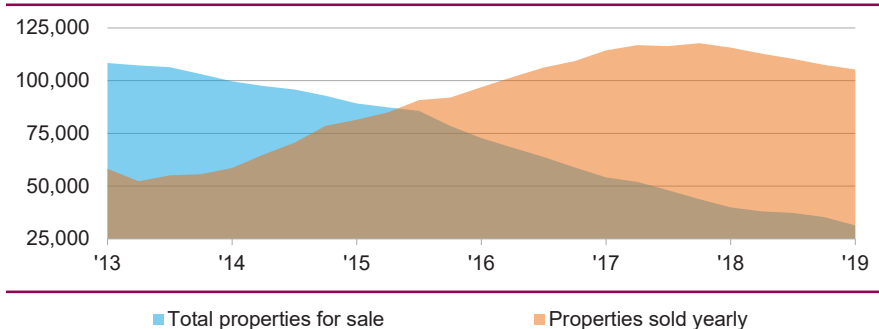

Figure 9b

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 5.9% for the Netherlands.
  - o The percentage of family homes sold previous year: 6.1%.
  - o The percentage of apartments sold previous year: 5.5%.
- The share of owner occupied housing stock which was sold last year is highest in the city of Groningen with 9.2%.
- In the municipality of Edam-Volendam only 3.2% of the existing stock of owner-occupied homes has changed owners.
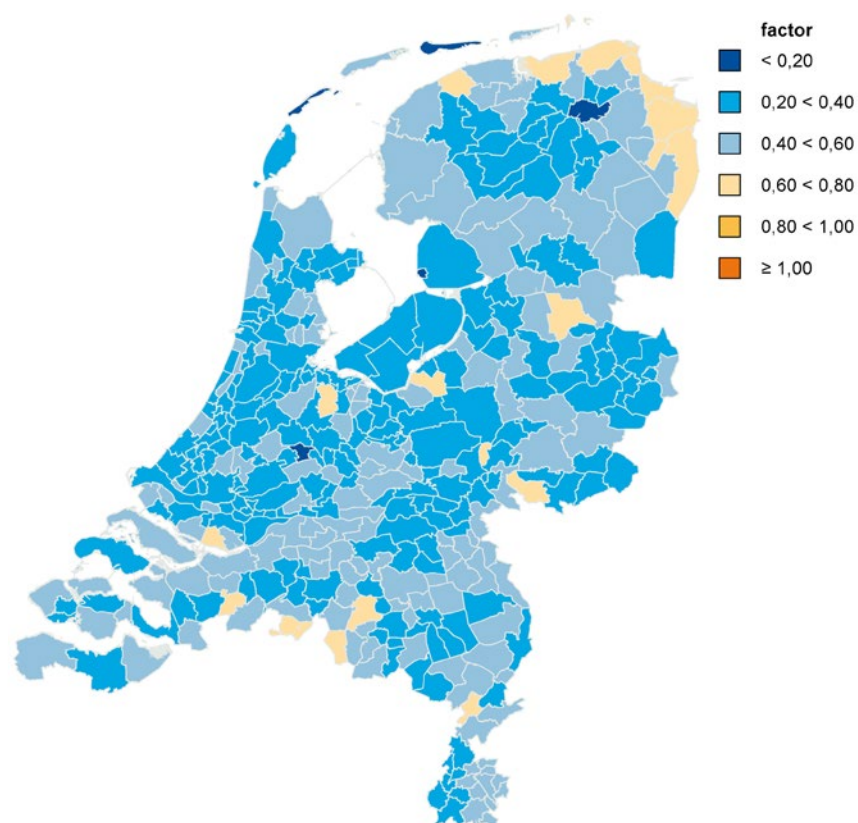
factor
- < 0,20
- 0,20 < 0,40
- 0,40 < 0,60
- 0,60 < 0,80
- 0,80 < 1,00
- ≥ 1,00

Supply/Sales ratio all properties per municipality
Source: WOX Monitor Calcasa

%
- < 10,0
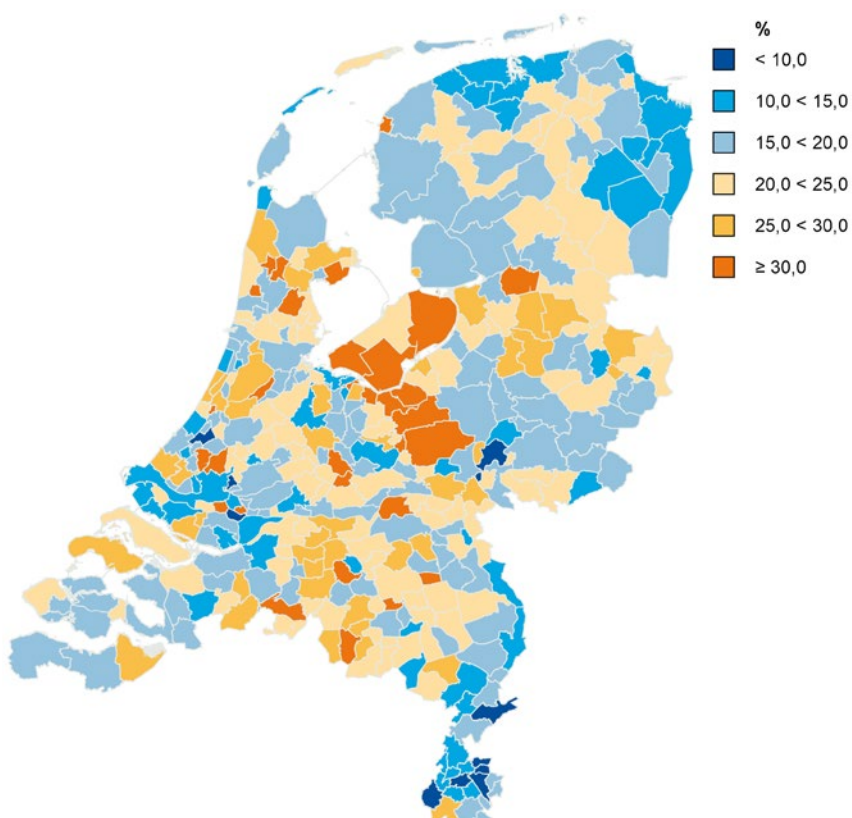- 10,0 < 15,0
- 15,0 < 20,0
- 20,0 < 25,0
- 25,0 < 30,0
- ≥ 30,0

Percentage of properties with energy label A per municipality
Source: WOX Monitor Calcasa

Mortgage approvals are decreasing

Approximately 334 thousand mortgages were approved last year.
- Y-O-Y development, number of annual mortgages: -4.6%.
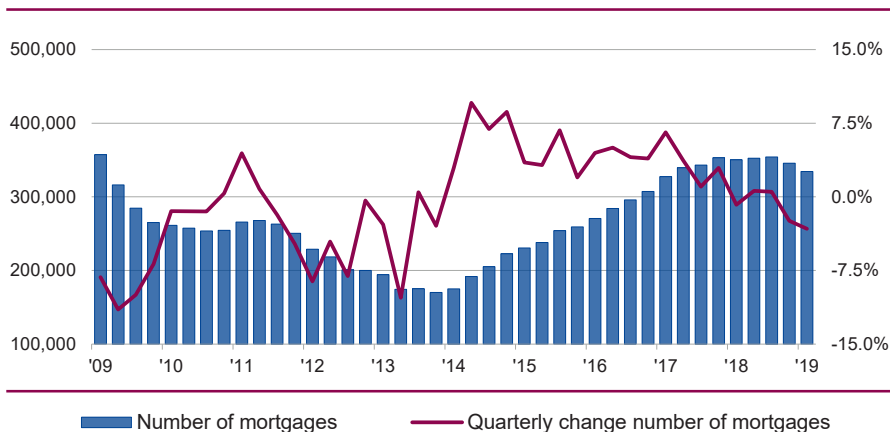- Q-O-Q development, number of annual mortgages: -3.3%.

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

Legend: Number of mortgages — Quarterly change number of mortgages

Number of foreclosures through auction decreases

Over the last four quarters, 639 foreclosures have been registered by the land registry.
- Y-O-Y development amount of annual foreclosures: -39.6%.
- Q-O-Q development amount of annual foreclosures: -7.9%.
- The share of foreclosure sales versus total sales is 0.2%.
- The highest share of foreclosure sales to total sales is 1.6% in the municipality of Nuth.
- 177 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.
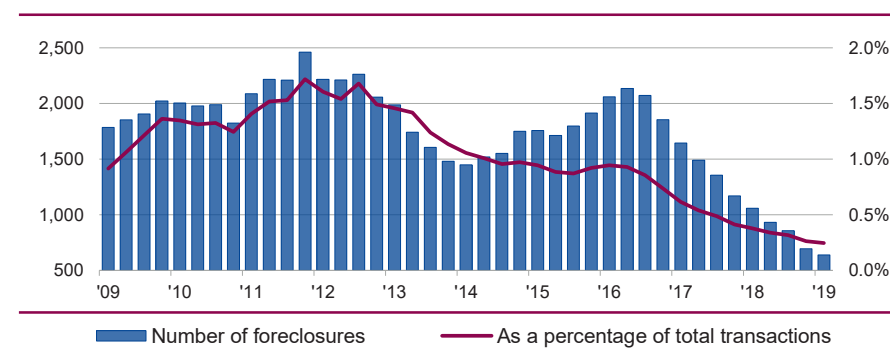
Number of yearly foreclosures and amount of foreclosures as a % of the total number of transactions in the Netherlands.
Source: Statistics Netherlands, Land Registry and adaptation Calcasa

Legend: Number of foreclosures — As a percentage of total transactions

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Average price newly built homes increased by 13% 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 fourth quarter of 2018 the average price for newly built houses was 382 thousand euros. This is an increase of 13.1% compared to a year ago.

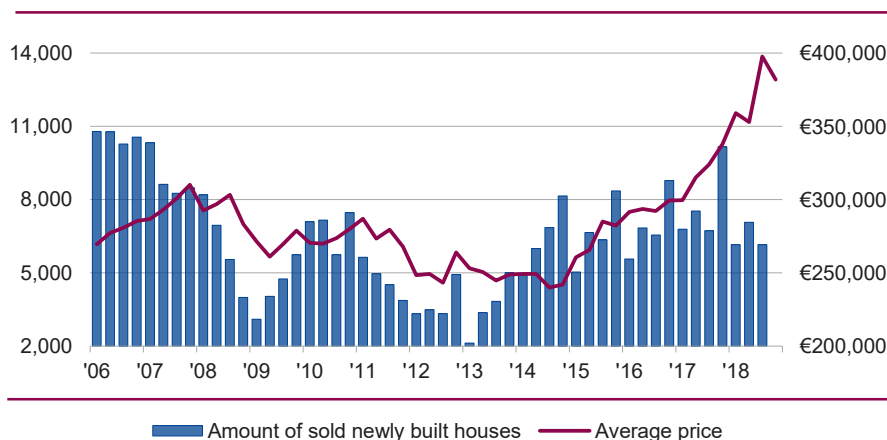
Amount of sold newly built houses — Average price

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: NEPROM, adaptation Calcasa

Amount of households in arrears decreased

- Since 2015 the number of homeowners with payment problems decreased with 35%.
- Currently there are 73 thousand homeowners who have difficulty paying their mortgage: this is a decrease of 15.1% compared to a year ago.
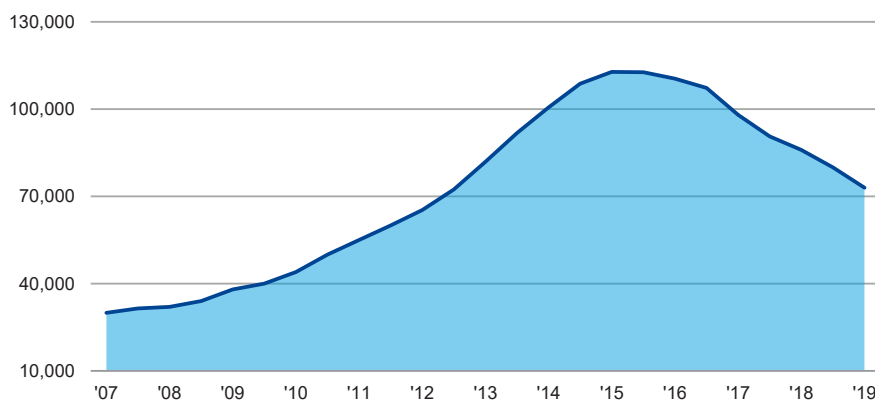

Figure 15

Number of borrowers with mortgage payment arrears
Source: BKR, adaptation Calcasa

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Industrial rental prices increase by 11% in three years

The average office rental price increased by 4.3% y-o-y in 1Q2019
The Calcasa PropertyNL OPI (Office Price Index) showed a value of 96 (4Q2001=100) for the first quarter of 2019. The average office rental value is now EUR130 per square meter.

The average retail rental price decreased by 3.3% y-o-y in 1Q2019
The Calcasa PropertyNL RPI (Retail Price Index) showed a value of 95 (4Q2001=100) for the first quarter of 2019. Compared to the first quarter of 2018, this is a decrease of 3.3%. The average retail rental value is now EUR147 per square meter.

The average industrial rental price increased by 4.4% y-o-y in 1Q2019
The Calcasa PropertyNL IPI (Industrial Price Index) showed a value of 104 (4Q2001=100) for the first quarter of 2019, an increase of 4.4% compared to the first quarter of 2018. The average industrial rental value is now EUR62 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)	96	€ 130	4.3%	7.2%
Retail (RPI)	95	€ 147	-3.3%	-3.5%
Industrial (IPI)	104	€ 62	4.4%	11.4%

Table 6

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

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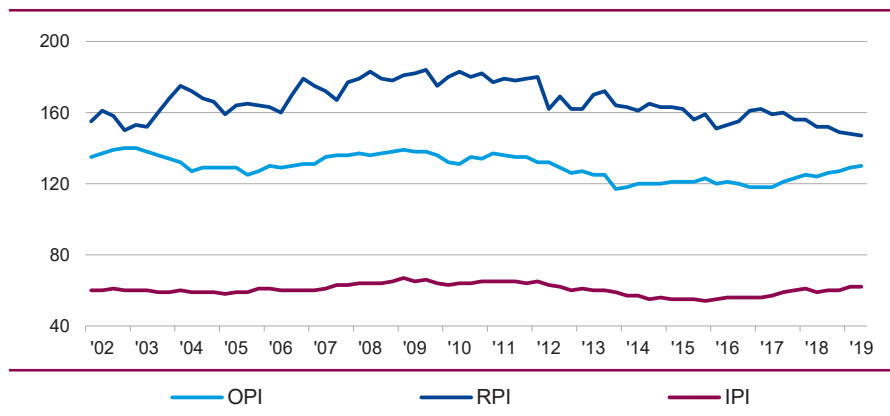## Commercial real estate index: A scientifically justified methodology

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.

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Dutch Housing Market Summary
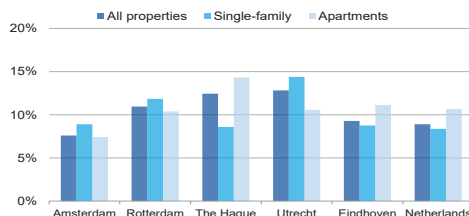
Largest cities	All properties	Single-family	Apartments	Owner occupied	Rental	Total population	Total households	Annual sales	Current supply
Amsterdam	433,000	63,000	370,000	30%	70%	854,050	467,610	11,501	
Rotterdam	311,000	88,000	224,000	34%	64%	638,710	321,690	8,633	
The Hague	257,000	59,000	198,000	42%	56%	532,560	260,890	8,317	
Utrecht	151,000	68,000	83,000	45%	54%	347,480	178,190	5,278	
Groningen	101,000	37,000	64,000	38%	61%	202,810	122,540	3,520	
Eindhoven	109,000	68,000	42,000	45%	54%	229,130	118,270	3,625	
Provinces									
Groningen	277,000	184,000	93,000	55%	44%	582,940	292,260	9,662	3,586
Friesland	298,000	244,000	55,000	61%	37%	647,270	290,340	10,527	4,161
Drenthe	221,000	183,000	38,000	65%	33%	492,100	216,370	8,852	3,351
Overijssel	500,000	385,000	115,000	60%	38%	1,151,500	499,030	16,805	5,744
Flevoland	166,000	132,000	34,000	64%	35%	411,670	170,800	6,368	1,927
Gelderland	894,000	676,000	218,000	60%	39%	2,060,100	914,370	31,029	11,158
Utrecht	558,000	355,000	203,000	57%	42%	1,295,480	584,260	19,300	5,744
North-Holland	1,318,000	670,000	649,000	50%	49%	2,831,180	1,352,240	41,324	12,658
South-Holland	1,678,000	834,000	844,000	51%	48%	3,681,040	1,701,660	53,184	15,587
Zeeland	185,000	151,000	34,000	65%	34%	382,300	173,950	7,609	2,864
North-Brabant	1,116,000	847,000	269,000	61%	38%	2,528,290	1,134,720	39,249	14,145
Limburg	529,000	391,000	138,000	60%	39%	1,117,200	527,920	16,195	6,435
Netherlands	**7,741,000**	**5,046,000**	**2,695,000**	**57%**	**42%**	**17,181,080**	**7,857,910**	**260,104**	**87,361**

Housing stock

- owner occupied housing 58%
- social housing 29%
- rental housing 13%
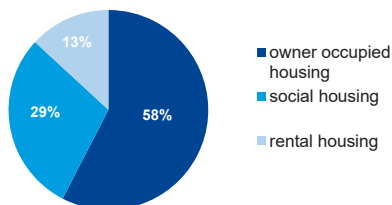
Y-O-Y price development largest cities

Legend: All properties, Single-family, Apartments
Categories: Amsterdam, Rotterdam, The Hague, Utrecht, Eindhoven, Netherlands

Mortgage developments

	Amount	Change
Sales with NHG	19,100	-12.4%
Execution sales with losses	121	-66.6%
Households in arrears	73,000	-15.1%
Sold mortgages	334,315	-4.6%
Total mortgage debt	705B	1.4%

Top mortgage lenders: increase/decrease market share

-1.3%, 1.7%, -0.9%, 0.8%, -0.8%, 0.7%, -0.5%, 0.6%, -0.5%, 0.4%

Legend: ASR Bank, ING Bank, Achmea, NIBC, Obvion, Fenerantis, Argenta, Munt, Aegon, NN

Macro-economic figures

GDP, inflation and employment rate in the Netherlands
Legend: GDP 2010=100, Inflation (%), Unemployment rate (%)
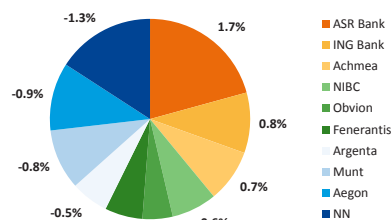
The WOX HPI versus total mortgage debt in the Netherlands
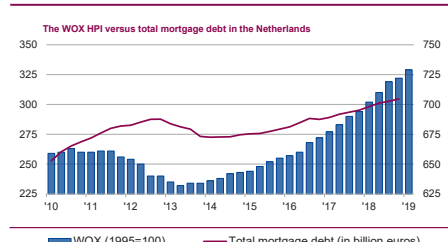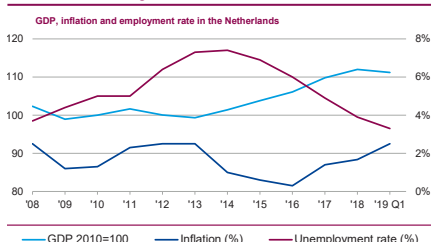Legend: WOX (1995=100), Total mortgage debt (in billion euros)

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

Visit calcasa.co.uk for more information

Appendices

Provinces	Detached houses	Semi-detached	Corner houses	Terraced houses	All single-family dwellings
Groningen	257,000	214,000	189,000	191,000	228,000
Friesland	292,000	215,000	179,000	165,000	227,000
Drenthe	328,000	231,000	190,000	174,000	251,000
Overijssel	385,000	255,000	225,000	211,000	262,000
Flevoland	489,000	315,000	246,000	232,000	275,000
Gelderland	450,000	310,000	262,000	236,000	320,000
Utrecht	755,000	514,000	379,000	355,000	454,000
North-Holland	588,000	480,000	374,000	342,000	431,000
South-Holland	577,000	438,000	335,000	312,000	367,000
Zeeland	322,000	222,000	189,000	179,000	238,000
North-Brabant	489,000	329,000	278,000	257,000	332,000
Limburg	356,000	230,000	213,000	203,000	251,000
Netherlands	**435,000**	**321,000**	**289,000**	**275,000**	**331,000**

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	195,000	173,000	190,000	203,000	210,000
Friesland	192,000	162,000	169,000	179,000	192,000
Drenthe	194,000	172,000	173,000	210,000	204,000
Overijssel	176,000	176,000	191,000	192,000	186,000
Flevoland	243,000	208,000	215,000	203,000	264,000
Gelderland	216,000	190,000	209,000	236,000	223,000
Utrecht	278,000	242,000	291,000	304,000	293,000
North-Holland	300,000	276,000	359,000	405,000	397,000
South-Holland	222,000	212,000	251,000	255,000	245,000
Zeeland	233,000	238,000	183,000	200,000	215,000
North-Brabant	244,000	212,000	233,000	245,000	243,000
Limburg	184,000	163,000	192,000	191,000	185,000
Netherlands	**235,000**	**218,000**	**261,000**	**298,000**	**273,000**

Table 10

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

Municipalities	Highest property values (x 1,000)	Municipalities	Lowest property values (x 1,000)
Bloemendaal	893	Delfzijl	163
Wassenaar	682	Oldambt	171
Heemstede	656	Veendam	181
Gooise Meren	531	Heerlen	182
De Bilt	515	Kerkrade	185
Wijdemeren	492	Brunssum	186
Amsterdam	485	Terneuzen	188
Zeist	483	Leeuwarden	191
Bergen (NH.)	482	Dongeradeel	195
Amstelveen	481	Waadhoeke	196

Table 11

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

Municipalities	Highest annual price development	Municipalities	Lowest annual price development
Bloemendaal	13.0%	Wijdemeren	4.6%
Utrecht	12.8%	Midden-Groningen	5.0%
's-Gravenhage	12.4%	Gooise Meren	5.3%
Haarlem	12.4%	Groningen	5.4%
Schiedam	12.2%	Leek	5.5%
Lelystad	12.1%	Aa en Hunze	5.6%
Noordoostpolder	12.1%	Zuidhorn	5.7%
Vlaardingen	12.0%	Tynaarlo	5.7%
Dordrecht	12.0%	Westerwolde	5.8%
Heemstede	11.9%	Huizen	5.9%

Table 12

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

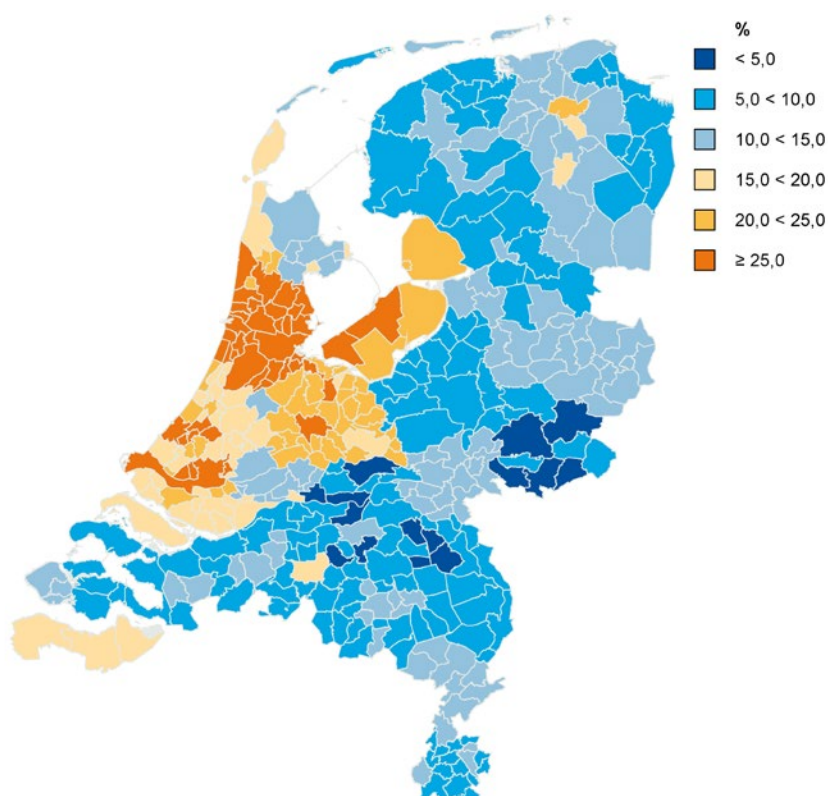![CALCASA® — Member of the European AVM Alliance]

Figure 23

The price development of all houses per municipality in 2019Q1 compared to 2008Q3
Source: Calcasa

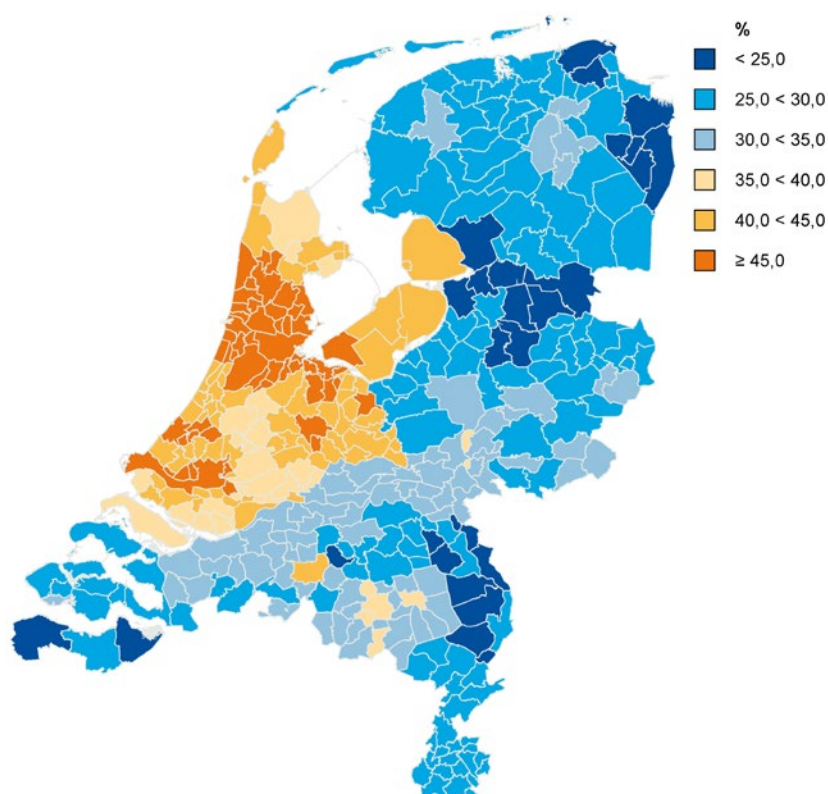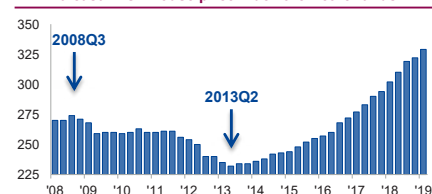Legend (%):
- < 5,0
- 5,0 < 10,0
- 10,0 < 15,0
- 15,0 < 20,0
- 20,0 < 25,0
- ≥ 25,0

Figure 24

The price development of all houses per municipality in 2019Q1 compared to 2013Q2
Source: Calcasa

Legend (%):
- < 25,0
- 25,0 < 30,0
- 30,0 < 35,0
- 35,0 < 40,0
- 40,0 < 45,0
- ≥ 45,0

**Calcasa WOX house price index the Netherlands**

2008Q3

2013Q2

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.
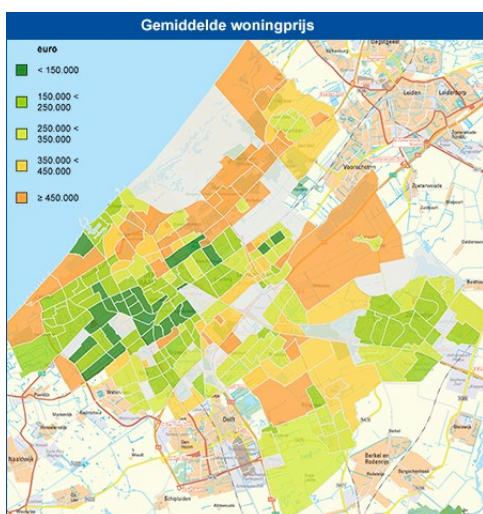
Calcasa PropertyNL Analyzer

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

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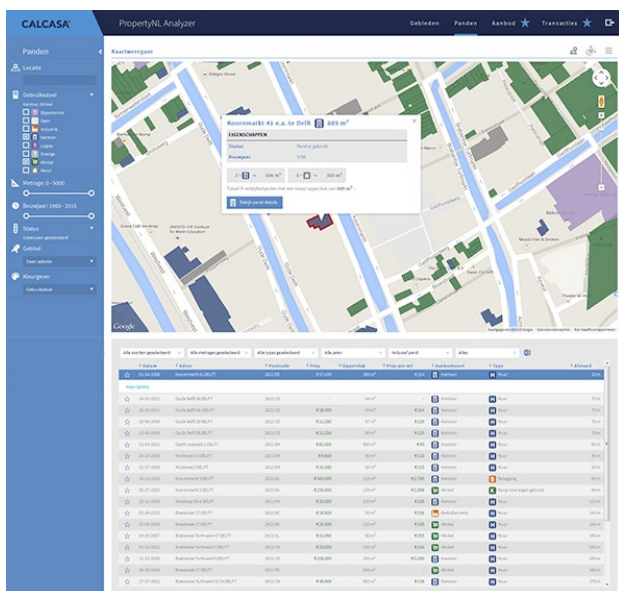
About Calcasa

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

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).