

Housing market developments – 4th quarter 2018

Strong house price growth in the Randstad

Average house prices increased in the provinces of Flevoland and South Holland with 12.2% and 11.0% year on year. The two largest cities, Amsterdam and Rotterdam, show average house price increases of respectively 11.7% and 13.5%. The Hague is currently registering the fastest growth of all the municipalities in the Netherlands with 13,9%.

Transactions and number of homes for sale drops

The annual number of sales increased in five years from 123 thousand to 263 thousand houses. The number of homes for sale continues to decline. The ratio between the number of sales and supply has reached a factor 0.4 (sales > supply) and in the urban agglomeration 'Randstad' this factor dropped to 0.3.

Housing affordability remains stable

On average, 16.0% of net household income was required to service housing costs, in 2008 this number was 27.0%.

CALCASA INDEXES 2018 Q4

Calcasa House Price Index (WOX) (1995Q1=100)	322
Calcasa WOX Top 15 Cities Index (1995Q1=100)	379
Residential price change	
WOX price change (year-on-year)	9.3%
WOX price change (quarter-on-quarter)	1.0%
WOX price change corrected for inflation (year-on-year)	7.3%
House price forecast	
Yearly price change 2019 Q1	8.5%
Quarterly price change 2019 Q1	-0.9%
Housing affordability	
Affordability index	16.0%
Yearly change in housing affordability	-5.2%
Quarterly change in housing affordability	-1.0%
Transactions	
Number of transactions on a yearly basis (x 1,000)	263
Yearly change in the number of transactions	-7.3%
Quarterly change in the number of transactions	-2.4%

*Housing stock January 1st, 2018, municipal reclassification 2017

Content WOX:

Introduction	1
House prices and development	2
Segment analyses and forecast	3
House prices by region	4
Affordability	5
House sales	6
Market liquidity	8
Mortgage market	11
Foreclosures	11
Commercial real estate	13
Dutch housing market summary	15
Appendices	16

Table 1

Calcasa key numbers Q4 2018
Source: WOX Monitor Calcasa

Average house price keeps rising

- The WOX (1995 = 100) currently stands at 322 points.
- Average house price: 308 thousand euro.
 - » Q-O-Q price development: +1.0%.
 - » Y-O-Y price development: +9.3%.
- The current Dutch inflation rate is 2.0% (which is the average rate for Q4 2018 according to Statistics Netherlands). In the fourth quarter of 2018, inflation-adjusted house prices rose by 7.3% y-o-y.

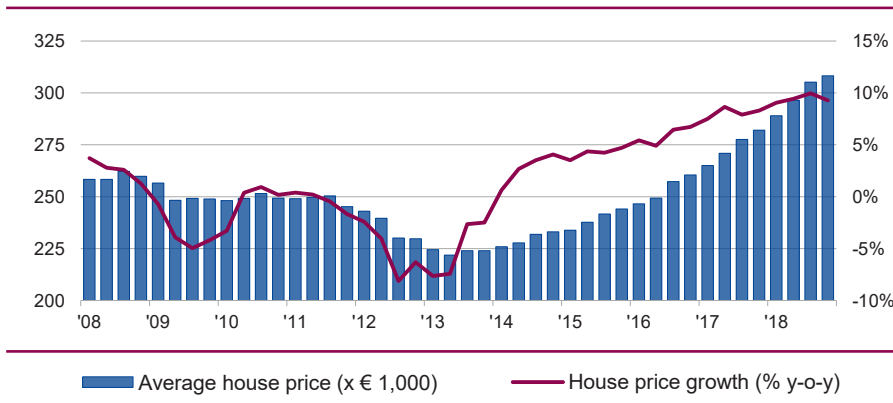


Figure 1

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: 323 thousand euro.
 - » Q-O-Q price development of single-family houses: +0.9%.
 - » Y-O-Y price development of single-family houses: +7.9%.
- Average price for apartments: 269 thousand euro.
 - » Q-O-Q price development of apartments: +1.3%.
 - » Y-O-Y price development of apartments: +13.8%.

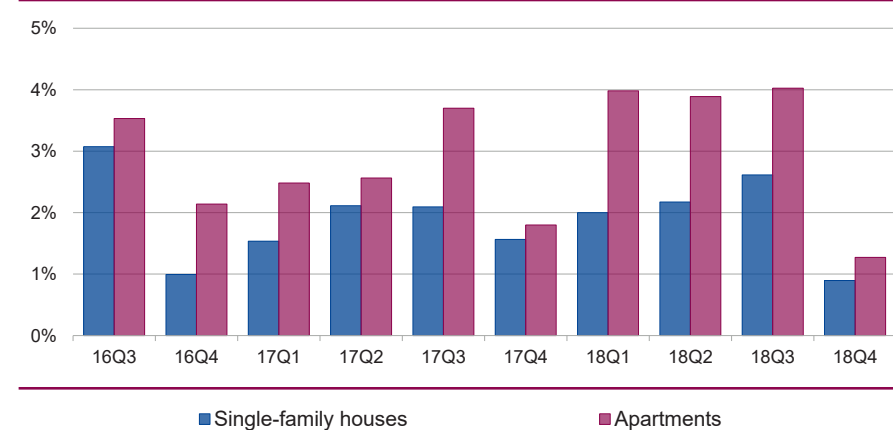


Figure 2

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 11.3%.
- The most expensive houses - worth 500k or more - increased the least in value; over the past year these homes increased in value by 7.3%.

Price class (euro)	Price development y-o-y
Less than 150,000	11.3%
150,000 to 250,000	9.4%
250,000 to 350,000	9.7%
350,000 to 500,000	8.7%
More than 500,000	7.3%
All residential properties	9.3%

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 13.8%.
- Apartments built between 1945 and 1979 are registering the fastest growth. Their value increased by 14.9% in the past year.

Development (y-o-y)	Construction year				Total
	<1944	1945-1979	>1980	>2000	
(semi) detached	6.3%	8.2%	7.2%	7.4%	7.3%
Terraced/corner house	7.4%	8.5%	8.6%	7.8%	8.2%
Apartment	14.5%	14.9%	13.3%	11.8%	13.8%
Total	10.2%	10.5%	9.6%	9.5%	9.3%

Forecast house price development in Q1 2019

- Q-O-Q price change: -0.9%.
- Y-O-Y price change: 8.5% (Q1 2018 - Q1 2019).
 - » Y-O-Y price change single-family homes: 7.6%.
 - » Y-O-Y price change apartments: 11.0%.

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: 9.6%
- Eastern part: 7.4%
- Northern part: 6.6%
- Southern part: 6.8%

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 in the Randstad

- Average house prices increased the most in the province of Flevoland, with an annual increase of 12.2% in value.
- Especially apartments in Flevoland and South-Holland are in demand, with values going up by 16.1% and 15.7% respectively.
- The lowest price increase was measured for houses in the provinces of Groningen (5.3%) and Limburg (5.7%).

Q4 2018	Average price	Average price	Price change
	single-family houses	apartments	(year-on-year)
Groningen	215,000	206,000	5.3%
Friesland	223,000	186,000	9.3%
Drenthe	245,000	198,000	7.9%
Overijssel	257,000	180,000	9.0%
Flevoland	269,000	259,000	12.2%
Gelderland	313,000	216,000	8.2%
Utrecht	441,000	290,000	8.6%
North-Holland	421,000	397,000	10.7%
South-Holland	359,000	241,000	11.0%
Zeeland	229,000	209,000	7.1%
North-Brabant	325,000	234,000	8.1%
Limburg	242,000	177,000	5.7%
The Netherlands	323,000	269,000	9.3%

Table 3

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

The Hague fastest growing region

- The largest annual price increase of 12.5% is measured for houses in the NUTS III region of The Hague. In this region the value of single-family homes rose by 7.4% and the value of apartments by 16.9%.
- Second-largest annual price increase is seen in the NUTS III region Flevoland with an annual growth rate of 12.2%, here the value of single-family homes rose by 11.7% and the value of apartments by 16.1%.
- The NUTS III regions with the smallest price increases are Midden-Limburg (3.8%) and East Groningen (4.2%).
- In 10 of the 40 NUTS III regions the annual increase for houses prices is more than 10%.

Housing affordability increases slightly

On average, 16.0% of net household income was required to service housing costs in the fourth quarter of 2018, compared to mid-2008 when housing costs represented 27.0% of net income.

- Q-O-Q change in net housing costs: +1.0%.
- Y-O-Y change in net housing costs: +5.2%.

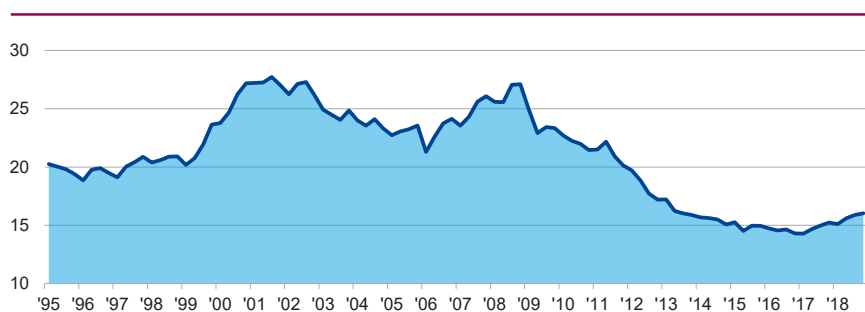


Figure 3

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

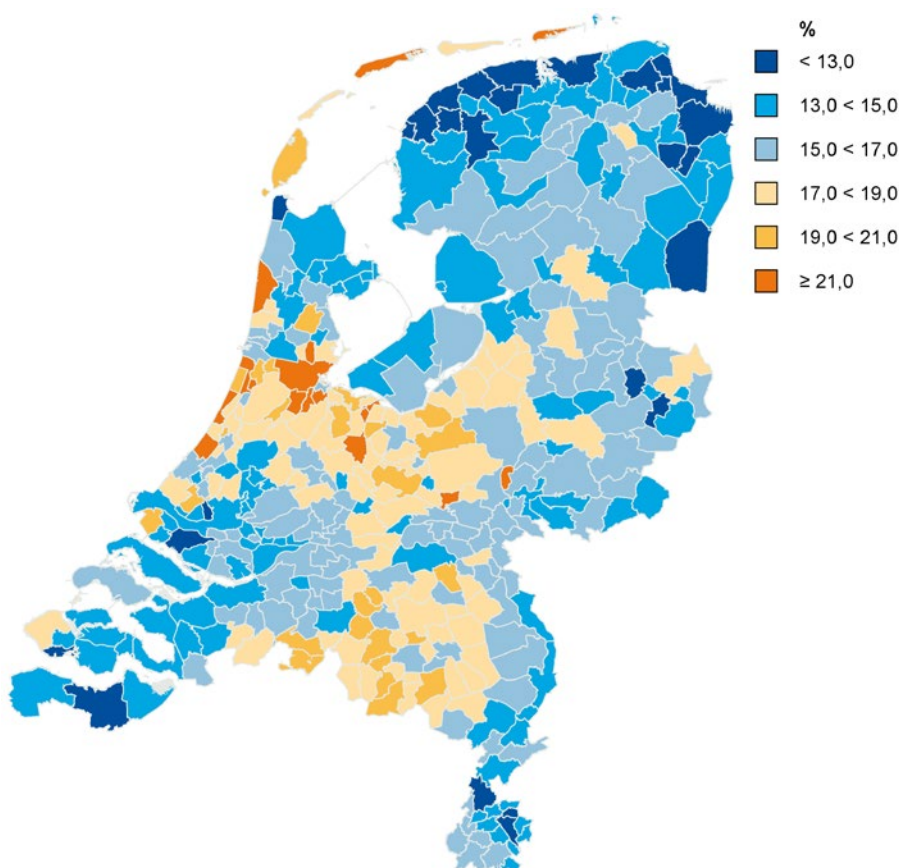


Figure 4

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. 263 thousand residential properties were sold during the past year.

- Y-O-Y development, number of annual sales: -7.3%.
- Q-O-Q development, number of annual sales: -2.4%.

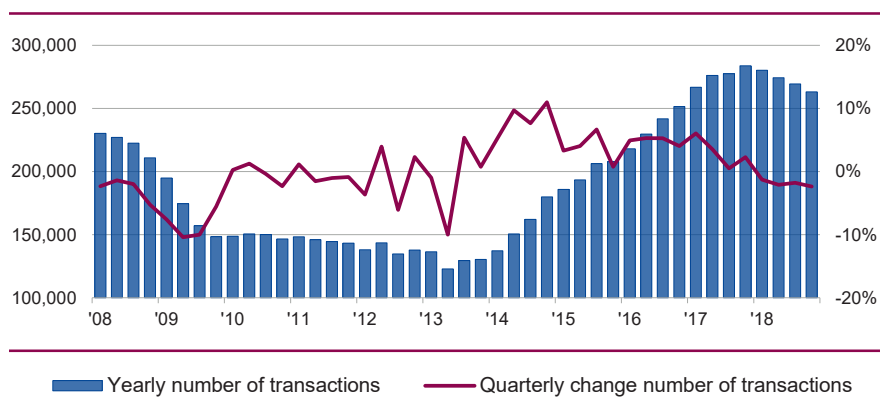


Figure 5

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 3.2%.
- Apartments sales decreased the most this quarter with 11.6% year-on-year. This is partly caused by a shrinking supply of apartments.

Transaction development y-o-y

Housing type	2017Q4	2018Q1	2018Q2	2018Q3	2018Q4
Detached	22.6%	12.2%	4.1%	1.5%	-3.2%
Semi-detached	16.9%	6.0%	-0.5%	-2.7%	-6.2%
Corner house	15.6%	7.5%	2.1%	0.1%	-5.2%
Terraced house	12.6%	5.6%	0.5%	-1.4%	-6.5%
Apartment	6.3%	-0.1%	-5.2%	-7.8%	-11.6%
Total	12.8%	5.0%	-0.7%	-2.9%	-7.3%

Table 4

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

Sales in expensive price class increased by 19%

- The sale of homes in the price range 350 to 500 thousand euros increased by 13.8% in the past year, whilst homes above 500 thousand euros increased by 19.1%.
- Especially in the east (31.7%) and in the north (36.1%) 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 43.0%.

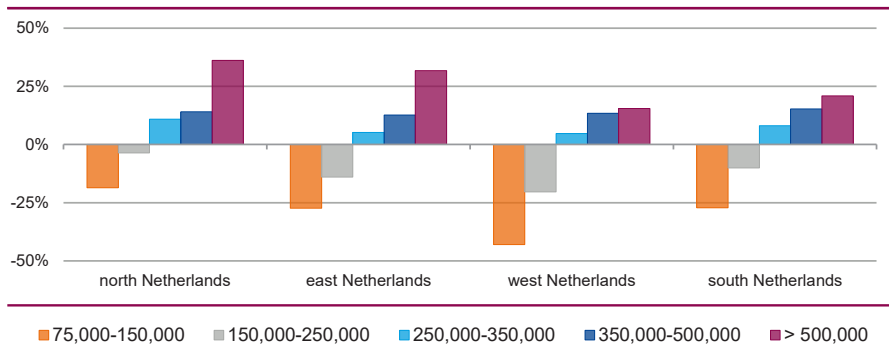


Figure 6

Growth (%) of share of housing sales per price class in North, East, West and South Netherlands in Q4 2018 compared to Q4 2017.

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 12%.
- The price segment 350 to 500 thousand euros increased in four years time from 8% to 15%.
- 10% 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

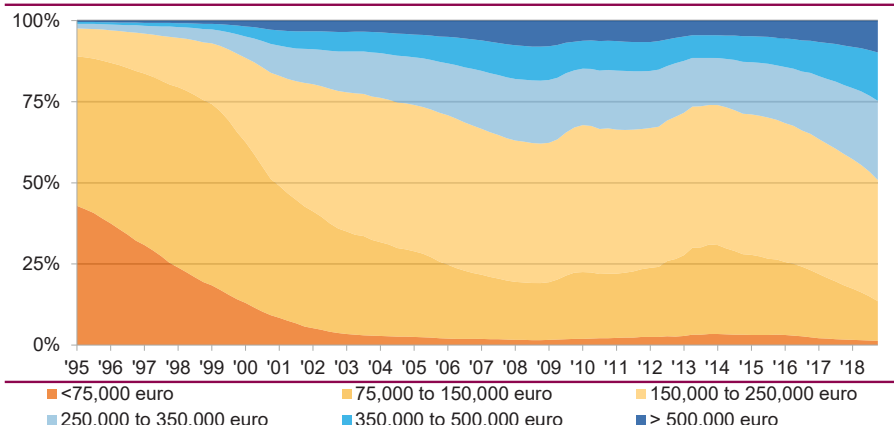


Figure 7

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

Visit calcasa.co.uk for more information

Groot-Amsterdam highest market liquidity

- In the NUTS III region Groot-Amsterdam 7.2% of the housing supply was sold during the past year. The regions of The Hague and Overig Groningen follow with 7.1% and 6.9% respectively.
- The NUTS III region IJmond had the lowest market liquidity: 4.8%.

NUTS III region	Percentage of housing supply sold last year	NUTS III region	Percentage of housing supply sold last year
Groot-Amsterdam	7.2%	IJmond	4.8%
's-Gravenhage	7.1%	Noord-Limburg	5.1%
Overig Groningen	6.9%	Midden-Limburg	5.1%
Groot-Rijnmond	6.9%	Leiden en Bollenstreek	5.2%
Zuidwest-Drenthe	6.6%	Achterhoek	5.3%
Overig Zeeland	6.6%	Delft en Westland	5.3%
Agglomeratie Haarlem	6.5%	Delfzijl en omgeving	5.4%
Noord-Overijssel	6.3%	Twente	5.4%
Arnhem/Nijmegen	6.2%	Zuid-Limburg	5.4%
Het Gooi en Vechtstreek	6.2%	Alkmaar en omgeving	5.6%

Table 5

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

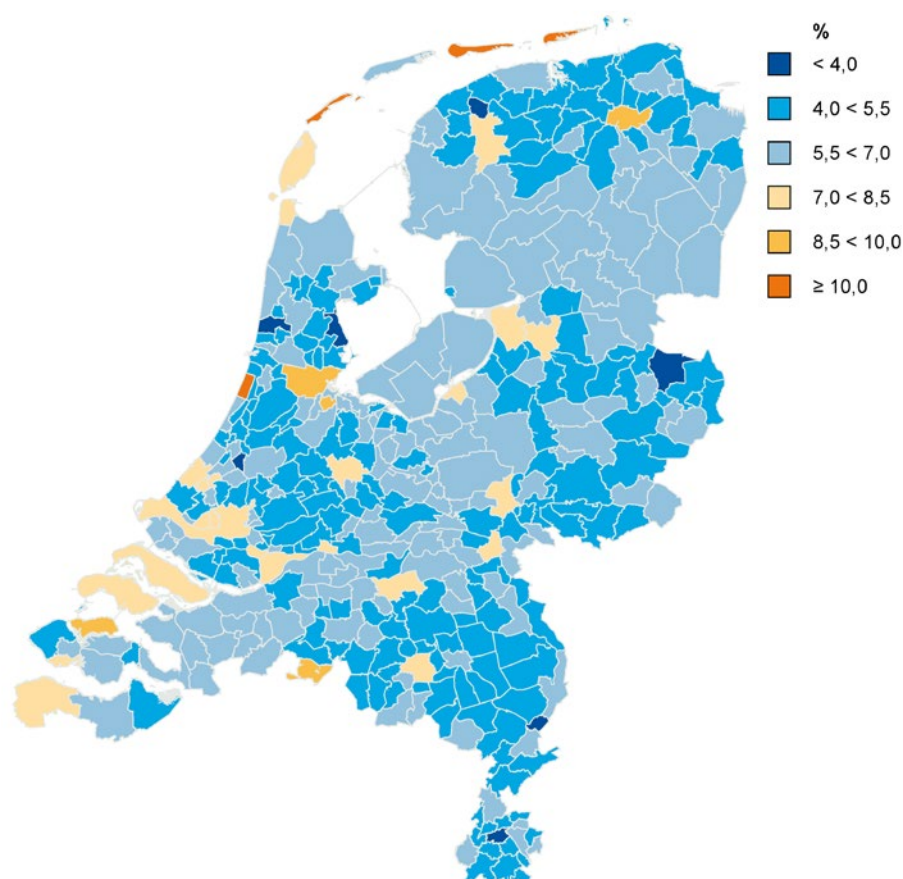


Figure 8

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 0.4. This is an improvement compared to last year when this ratio was still 0.5.
- The annual number of houses sold: 263 thousand.
 - » Y-O-Y development: -7.3%
- Homes for sale in Q4 2018: 95 thousand
 - » Y-O-Y development: -27.2%
- The market liquidity is best in the municipality of Groningen with a factor of 0.16.
- In the municipality of Montferland the market liquidity is highest (worst) with a factor of 0.78, followed by the municipality of Oldambt with a factor of 0.77.

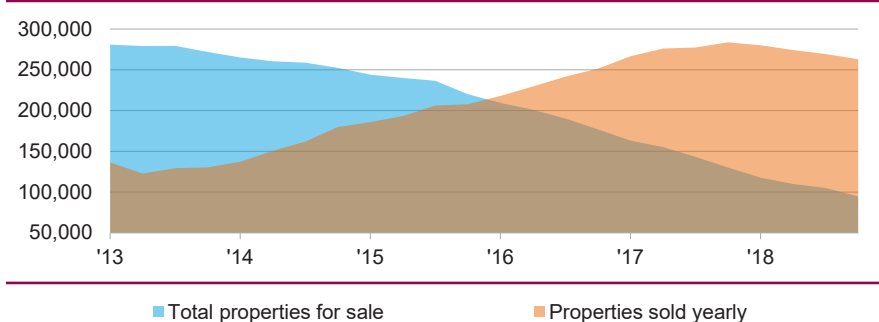


Figure 9a

Annual number of properties for sale versus number of properties sold over the period 2013-2018 in the Netherlands. Source: Multiple real estate agents, adaptation Calcasa

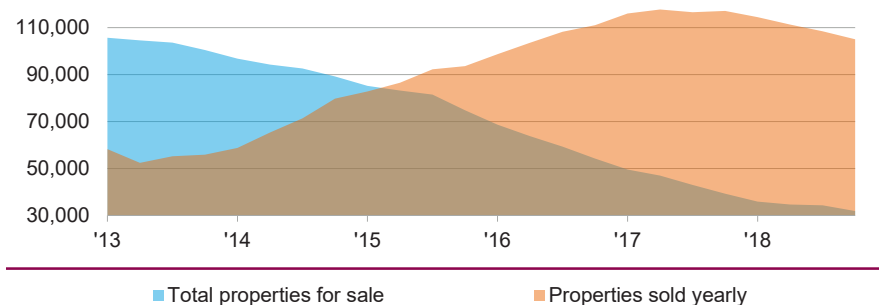


Figure 9b

Annual number of properties for sale versus number of properties sold over the period 2013-2018 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 6.1% for the Netherlands.
 - o The percentage of family homes sold previous year: 5.8%.
 - o The percentage of apartments sold previous year: 7.1%.
- The share of owner occupied housing stock which was sold last year is highest in the city of Groningen with 9.4%.
- In the municipality of Edam-Volendam only 3.3% of the existing stock of owner-occupied homes has changed owners.

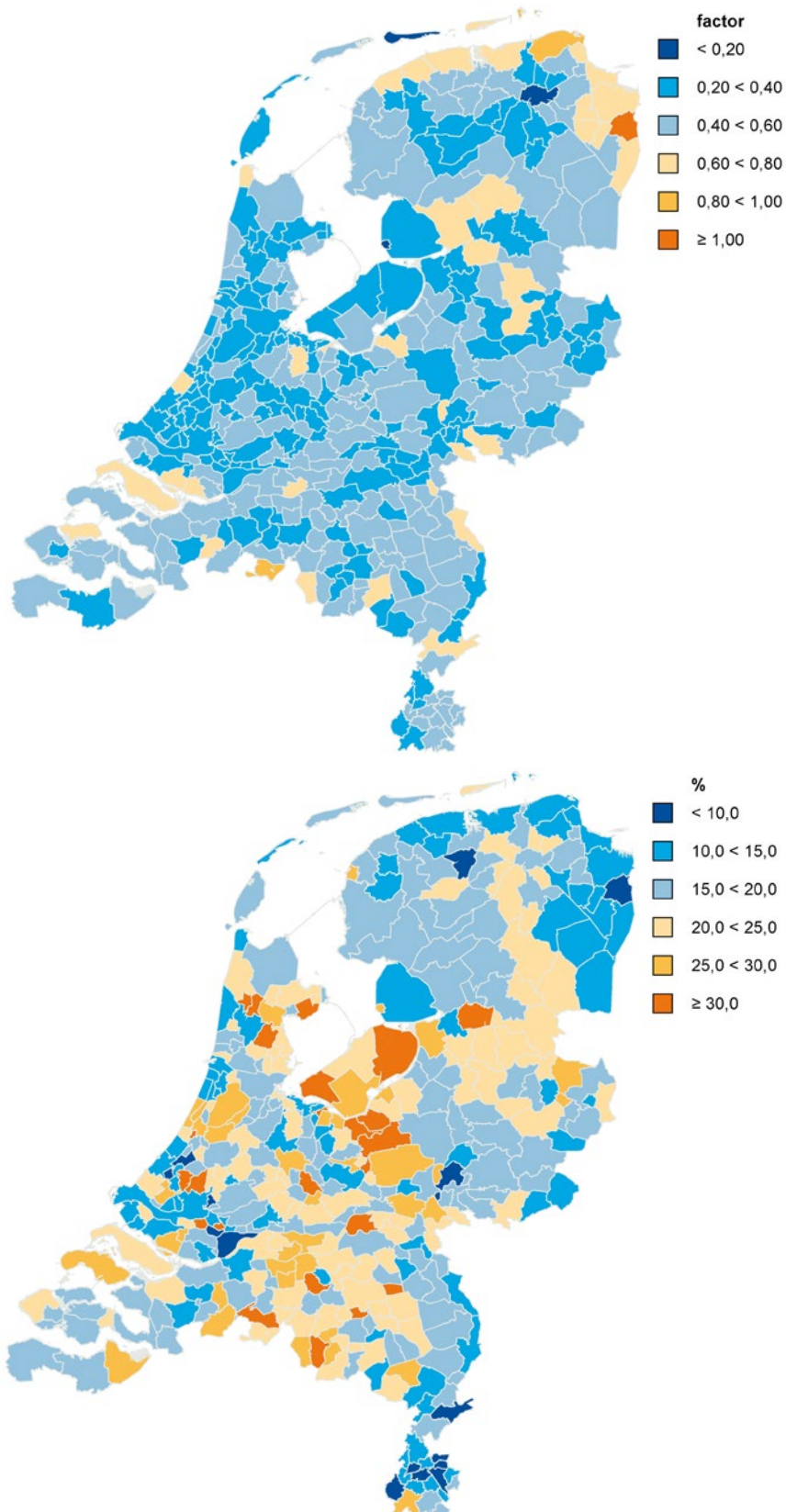


Figure 10

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 keep rising

Approximately 354 thousand mortgages were approved last year.

- Y-O-Y development, number of annual mortgages: +3.3%.
- Q-O-Q development, number of annual mortgages: +0.5%.

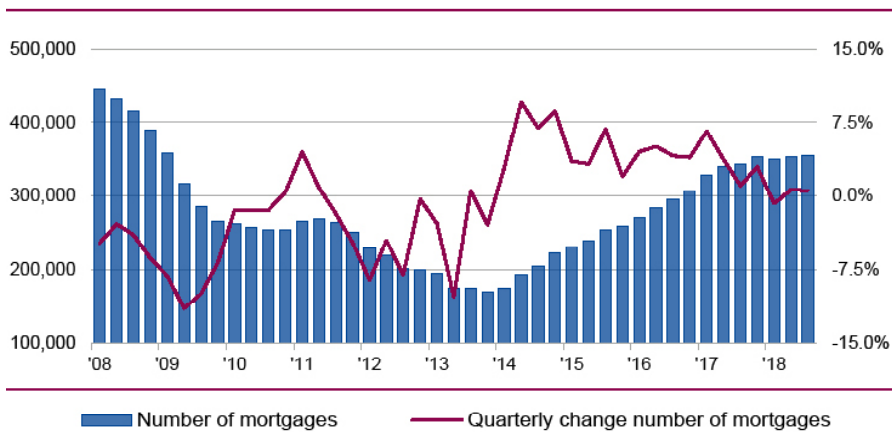


Figure 12

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

Number of foreclosures through auction decreases

Over the last four quarters, 693 foreclosures have been registered by the land registry.

- o Y-O-Y development amount of annual foreclosures: -40.9%.
- o Q-O-Q development amount of annual foreclosures: -19.0%.
- The share of foreclosure sales versus total sales is 0.3%.
- The highest share of foreclosure sales to total sales is 1.4% in the municipality of Landgraaf.
- 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.

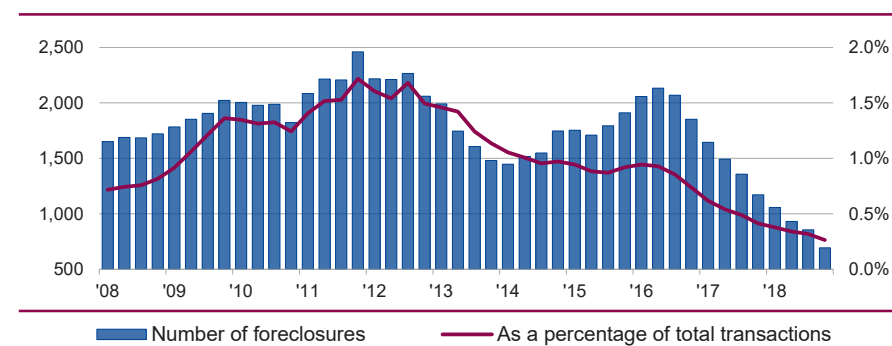


Figure 13

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 23% 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 third quarter of 2018 the average price for newly built houses was 398 thousand euros. This is an increase of 22.7% compared to a year ago.

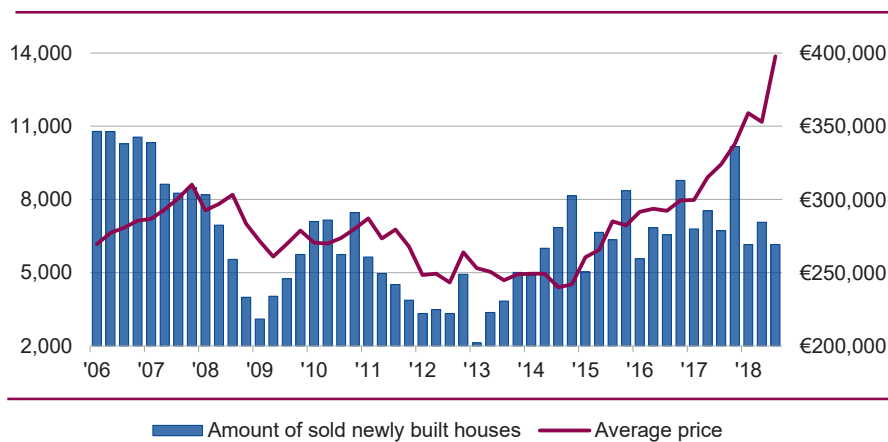


Figure 14

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

Source: NEPROM, adaptation Calcasa

Amount of households in arrears decreased

- Since 2015 the number of homeowners with payment problems decreased with 29%.
- Currently there are 80 thousand homeowners who have difficulty paying their mortgage: this is a decrease of 11.7% compared to a year ago.

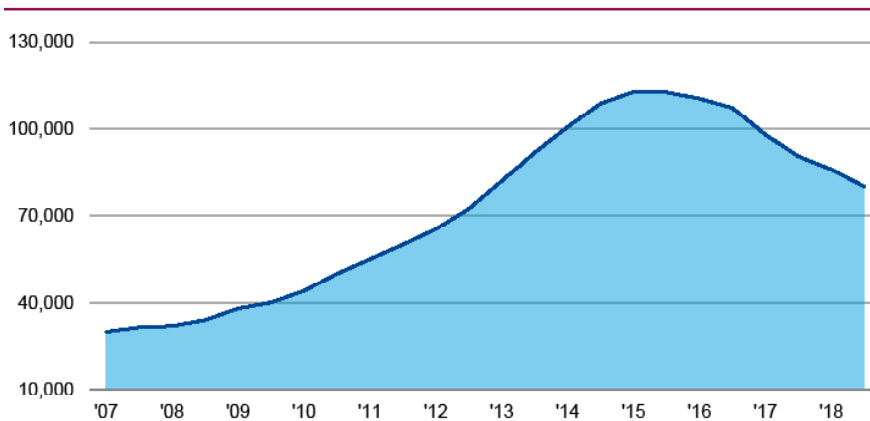


Figure 15

Number of borrowers with mortgage payment arrears

Source: BKR, adaptation Calcasa

Retail rental prices decrease by 5% in one year

The average office rental price increased by 2.6% y-o-y in 4Q2018

The Calcasa PropertyNL OPI (Office Price Index) showed a value of 95 (4Q2001=100) for the fourth quarter of 2018. The average office rental value is now EUR128 per square meter.

The average retail rental price decreased by 4.7% y-o-y in 4Q2018

The Calcasa PropertyNL RPI (Retail Price Index) showed a value of 97 (4Q2001=100) for the fourth quarter of 2018. Compared to the fourth quarter of 2017, this is a decrease of 4.7%. The average retail rental value is now EUR148 per square meter.

The average industrial rental price increased by 2.2% y-o-y in 4Q2018

The Calcasa PropertyNL IPI (Industrial Price Index) showed a value of 102 (4Q2001=100) for the fourth quarter of 2018, an increase of 2.2% compared to the fourth quarter of 2017. The average industrial rental value is now EUR61 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.

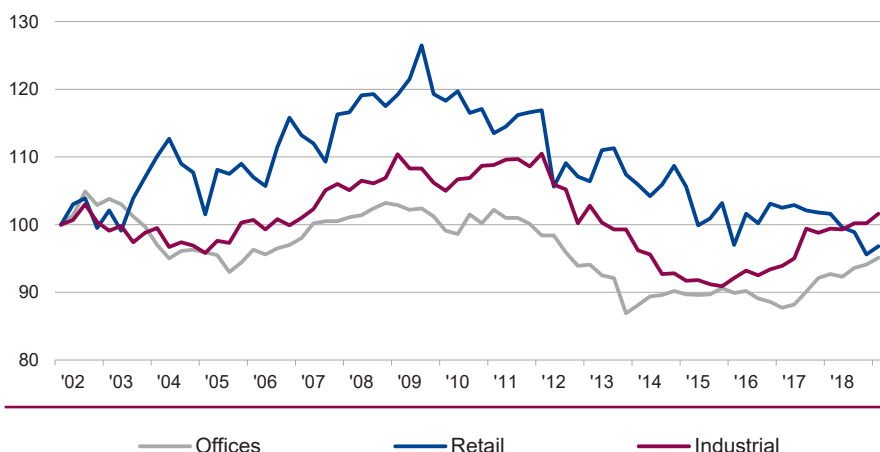


Figure 16

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)	95	€ 128	2.6%	5.9%
Retail (RPI)	97	€ 148	-4.7%	-0.2%
Industrial (IPI)	102	€ 61	2.2%	10.4%

Table 6

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

Visit calcasa.co.uk for more information

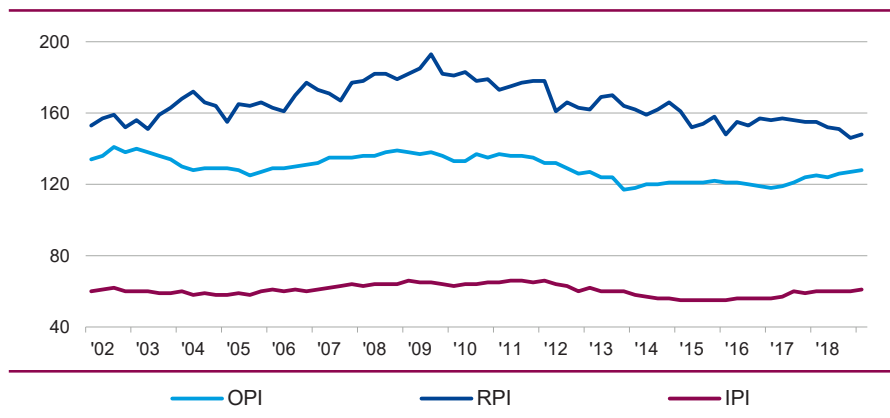


Figure 17

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.

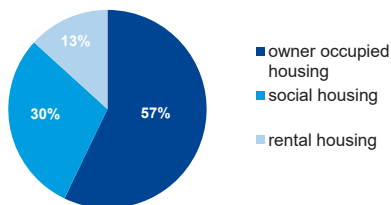
With the application of the hedonic method, it is essential that objects and their location are documented precisely, using the characteristics that influence the price. Hence, when using a hedonic index model, a range of object characteristics are taken into account, e.g. living area and year of construction.

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.

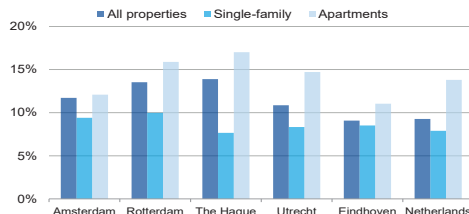
Dutch Housing Market Summary

	Largest cities	All properties	Single-family	Apartments	Owner occupied	Rental	Total population	Total households	Annual sales	Current supply
Amsterdam	428,000	100,000	328,000	30%	70%	844,950	462,330	11,790		
Rotterdam	310,000	111,000	199,000	35%	64%	634,660	319,780	8,961		
The Hague	255,000	74,000	181,000	42%	56%	524,880	257,190	8,566		
Utrecht	151,000	77,000	74,000	45%	53%	343,040	176,590	5,355		
Groningen	101,000	40,000	62,000	38%	61%	202,640	122,280	3,609		
Eindhoven	108,000	74,000	34,000	45%	53%	226,870	116,320	3,746		
Provinces										
Groningen	277,000	197,000	80,000	54%	45%	583,580	291,320	9,693	4,103	
Friesland	296,000	257,000	40,000	61%	37%	646,870	289,340	10,767	4,531	
Drenthe	219,000	193,000	27,000	65%	34%	491,790	215,130	8,824	3,678	
Overijssel	497,000	413,000	84,000	59%	39%	1,147,690	495,380	16,891	6,277	
Flevoland	164,000	137,000	27,000	64%	35%	407,820	168,680	6,408	1,968	
Gelderland	888,000	720,000	168,000	59%	39%	2,047,900	906,480	31,232	12,219	
Utrecht	554,000	379,000	175,000	57%	41%	1,284,500	579,180	19,305	6,151	
North-Holland	1,307,000	744,000	563,000	50%	49%	2,809,480	1,341,500	41,616	13,447	
South-Holland	1,667,000	916,000	751,000	51%	48%	3,650,220	1,685,400	54,561	16,828	
Zeeland	184,000	157,000	27,000	65%	34%	381,570	172,920	7,685	3,160	
North-Brabant	1,104,000	893,000	212,000	61%	38%	2,512,530	1,122,800	39,747	15,587	
Limburg	527,000	423,000	105,000	59%	40%	1,117,550	525,940	16,327	6,792	
Netherlands	7,686,000	5,424,000	2,263,000	56%	43%	17,081,510	7,794,080	263,056	94,741	

Housing stock



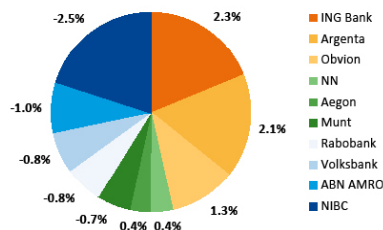
Y-O-Y price development largest cities



Mortgage developments

	Amount	Change
Sales with NHG	28,900	-6.2%
Execution sales with losses	182	-60.1%
Households in arrears	80,000	-11.7%
Sold mortgages	354,216	3.3%
Total mortgage debt	702B	1.3%

Top mortgage lenders: increase/decrease market share



Macro-economic figures

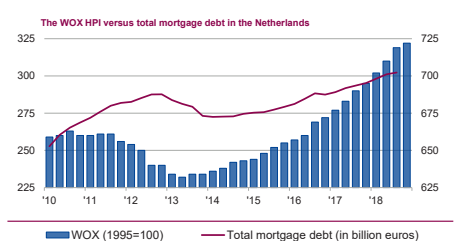
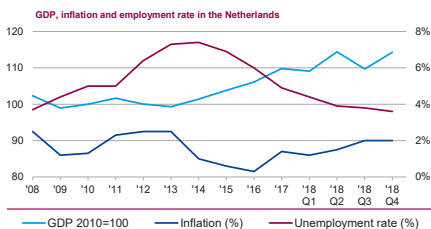


Table 7

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

Visit calcasa.co.uk for more information

Appendices

Provinces	Detached houses	Semi-detached	Corner houses	Terraced houses	All single-family dwellings
Groningen	254,000	211,000	189,000	191,000	215,000
Friesland	288,000	212,000	178,000	165,000	223,000
Drenthe	322,000	228,000	190,000	175,000	245,000
Overijssel	379,000	249,000	225,000	213,000	257,000
Flevoland	442,000	318,000	243,000	230,000	269,000
Gelderland	442,000	308,000	259,000	236,000	313,000
Utrecht	747,000	517,000	376,000	351,000	441,000
North-Holland	581,000	483,000	369,000	340,000	421,000
South-Holland	568,000	434,000	332,000	309,000	359,000
Zeeland	309,000	213,000	187,000	178,000	229,000
North-Brabant	473,000	326,000	280,000	259,000	325,000
Limburg	350,000	229,000	212,000	204,000	242,000
Netherlands	425,000	319,000	286,000	273,000	323,000

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	190,000	173,000	186,000	200,000	206,000
Friesland	192,000	156,000	170,000	177,000	186,000
Drenthe	189,000	164,000	170,000	204,000	198,000
Overijssel	174,000	166,000	187,000	185,000	180,000
Flevoland	240,000	195,000	213,000	213,000	259,000
Gelderland	209,000	184,000	205,000	228,000	216,000
Utrecht	275,000	237,000	287,000	299,000	290,000
North-Holland	303,000	273,000	353,000	403,000	397,000
South-Holland	215,000	207,000	249,000	252,000	241,000
Zeeland	229,000	218,000	187,000	196,000	209,000
North-Brabant	237,000	206,000	230,000	243,000	234,000
Limburg	180,000	156,000	180,000	187,000	177,000
Netherlands	231,000	213,000	260,000	293,000	269,000

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	864	Delfzijl	160
Wassenaar	675	Oldambt	168
Heemstede	636	Veendam	178
Gooise Meren	524	Heerlen	179
De Bilt	506	Kerkrade	182
Wijdmeren	489	Brunssum	182
Amsterdam	484	Terneuzen	183
Zeist	475	Leeuwarden	184
Amstelveen	474	Franekeradeel	187
Bergen (NH.)	473	Dongeradeel	191

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
's-Gravenhage	13.9%	Maasgouw	3.0%
Rotterdam	13.5%	Roerdalen	3.0%
Rijswijk	13.0%	Leudal	3.1%
Schiedam	12.9%	Echt-Susteren	3.6%
Almere	12.7%	Zuidhorn	3.9%
Haarlem	12.6%	Haren	3.9%
Lelystad	12.2%	Leek	4.2%
Vlaardingen	12.2%	Roermond	4.3%
Amsterdam	11.7%	Stadskanaal	4.4%
Leidschendam-Voorburg	11.6%	Weert	4.4%

Table 12

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

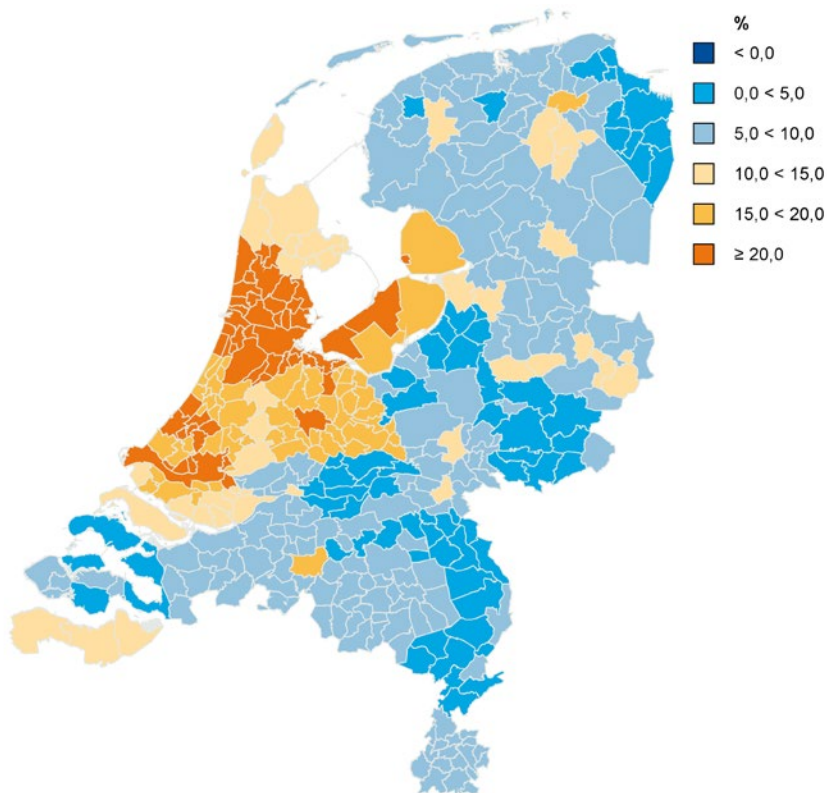


Figure 23

The price development of all houses per municipality in 2018Q4 compared to 2008Q3
Source: Calcasa

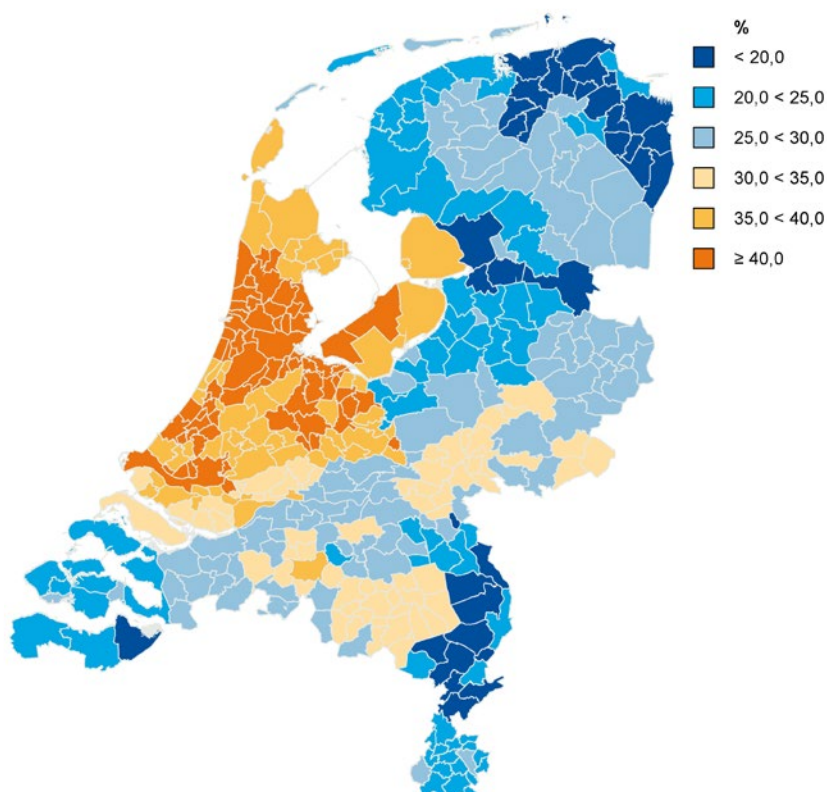
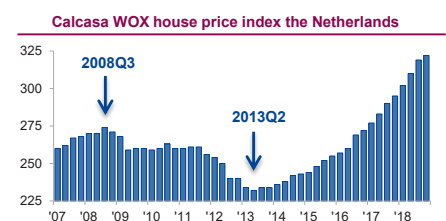


Figure 24

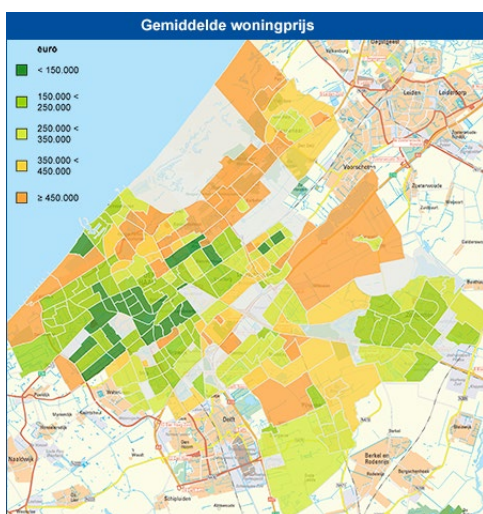
The price development of all houses per municipality in 2018Q4 compared to 2013Q2
Source: Calcasa



Visit calcasa.co.uk for more information

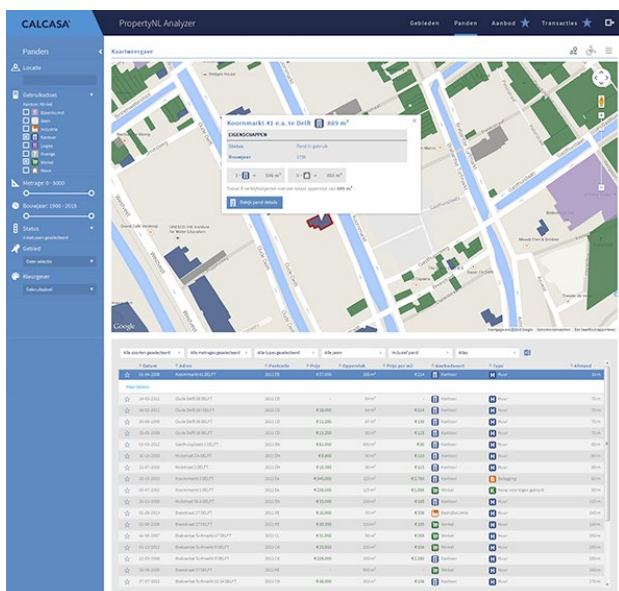
The WOX Monitor: All housing market data for every neighborhood

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



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).

Calcasa

Koornmarkt 41

2611 EB Delft

The Netherlands

T 0031 15 214 88 34

Visit calcasa.co.uk for more information