

Contents

1. Executive Summary	2
2. Market Update	3
3. Owner-occupied Mortgages	9
4. Buy-to-let Mortgages	15
5. Funding Update	17
6. News	23
Appendix	28

Dutch Mortgage Market 2019 Q3 Update

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In this quarterly report we discuss developments in the Dutch housing market and the broader economy. Dynamic Credit launched the ‘The Mortgage Bond Programme’, which we think will change the Dutch mortgage market as it enables institutional investors in getting tailored exposure to Dutch mortgages in an easy, cost-efficient, and transparent way.

As always, we welcome the opportunity to discuss the housing market or investing in Dutch owner-occupied or buy-to-let mortgage loans with you.



"The summer ended with steep decreases in mortgage rates as a delayed response to decreases in swap rates resulting in spread levels normalizing."

"We expect the NHG market share to increase steeply in 2020-Q1 as the NHG limit will be increased from EUR 290K to EUR 310K in 2020."

Jasper Koops,
Portfolio Manager

1. Executive Summary

Spread levels normalized: in the previous quarter, mortgage spreads reached levels that were higher than previously seen in 2018 and 2019 as mortgage rates were slow to respond to decreases in swap rates. That trend continued at the beginning of 2019-Q3 but a significant reaction came in August and September as mortgage rates decreased by 37 basis points on average across major fixed rate periods and risk classes during the quarter. Rates decreases continued in October but slowed down towards the end of the month.

House prices are still increasing: increases of 1.8% during 2019-Q3 were higher than in the previous quarter (1.1%). Prices in the 4 main Randstad municipalities all had lower QoQ growth than the national average, highlighted by Amsterdam where prices only increased 0.6% QoQ. Drenthe (+3.4% QoQ) and Groningen province (+3.1%) increased the fastest. Prices in Noord-Holland only increased 1.1% QoQ.

Increase in number of property transfers: approximately 59,000 houses were transferred in 2019-Q3 in the Netherlands, an increase of 12.2% QoQ and an increase of 3.5% compared to 2018-Q3.

Dutch inflation remains higher than in the euro zone: the increase is related to an increase of the low VAT rate in the Netherlands and an increase in energy taxes, but also to the fact that the Dutch economy is not as dependent on the struggling manufacturing sector as other countries, such as Germany.

Mario Draghi continued to “do whatever it takes”. Before finishing his 8 years of tenure as the president of the ECB he lowered the deposit rate by 10 basis points to -0.5% and launched a new net asset purchase programme. Christine Lagarde, who encourages governments “to fix the roof while the sun is shining” will take over in November 2019.

Negative mortgage rates in Denmark are not comparable to Dutch rates. Lately there has been increased attention from Dutch news outlets on Danish mortgage rates. The reason was a Danish Bank launching a mortgage with a negative coupon rate during the quarter which triggered the question if Dutch rates would also get into negative territory. We have investigated the differences between Dutch and Danish mortgages. Spoiler alert: Danish rates are not comparable to Dutch rates and negative rates are very unlikely in the Netherlands.

Prince’s Day 2019: The Dutch government presented the budget plans for 2020 which, among other changes, included wealth tax changes negatively impacting buy-to-let landlords investing with borrowed money.

Nitrogen crisis: The quarter saw massive protests by Dutch farmers as the nitrogen ruling is adversely affecting them. Many construction workers are expected to become temporarily unemployed as projects are stalled. The government has indicated that they are ready to take action.

2. Market Update

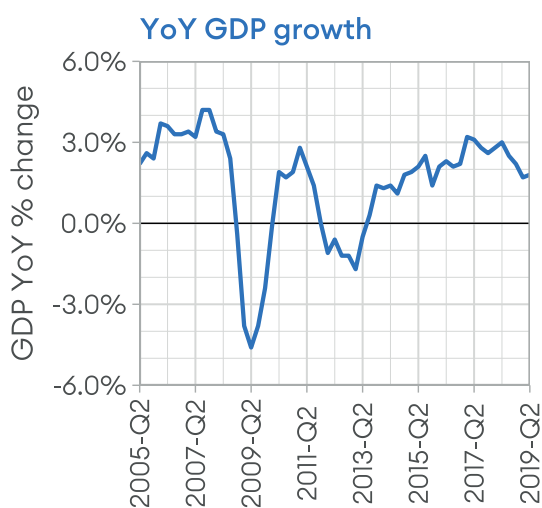
The following sections provide an update on the macroeconomic outlook and housing market developments.

Macroeconomic update

The most recent economic updates from the Central Bureau of Statistics (“CBS”) on key economic indicators showed an increase in GDP growth from 1.7% YoY in 2019-Q1 to 1.8% YoY in 2019-Q2 (published with one quarter delay, Figure 1).

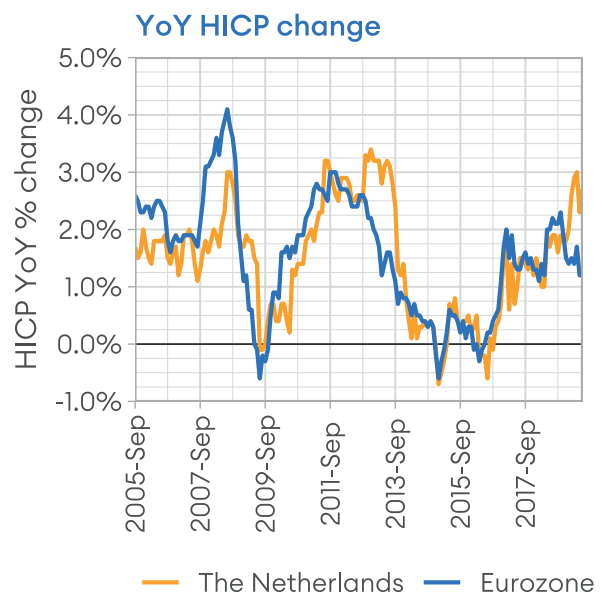
- Inflation was higher in the Netherlands than in Germany where global trade tensions hurt the manufacturing sector-

In September 2019, Dutch HICP (“Harmonised Index Consumer Prices”) increased 2.7% YoY (2.7% YoY in June). It should be noted that the low VAT rate was increased in the Netherlands in January 2019. In the euro-zone, the HICP increased 0.9% YoY in September (1.3% YoY in June 2019). The numbers for the euro area were disappointing. The decrease happened as global manufacturing is hurt by trade tensions, weakening demand and geopolitical uncertainty. A [report](#) from IHS Markit showed that new orders decreased to the lowest level in 7 years. The situation is not expected to improve in the coming months. Germany, a manufacturing powerhouse, is more severely affected than the Netherlands, a country which is more reliant on the better performing service sectors.



Source: Dynamic Credit, CBS

Figure 1: Dutch GDP growth. As of 2019-Q2



Source: Dynamic Credit, CBS

Figure 2: HICP change. As of September 2019

Dutch consumer confidence decreased from 0 in June 2019 to -1 in October (Figure 3). The decrease in consumer confidence was driven by a decrease in the economic climate from +2 in June 2019 to -4 in October 2019 as consumers were less pessimistic about the economic situation over the coming 12 months (-14 in October, was -7 in June). In contrary, the 'Right time to make large purchases' category, increased from 4 in June 2019 to 7 in October 2019.

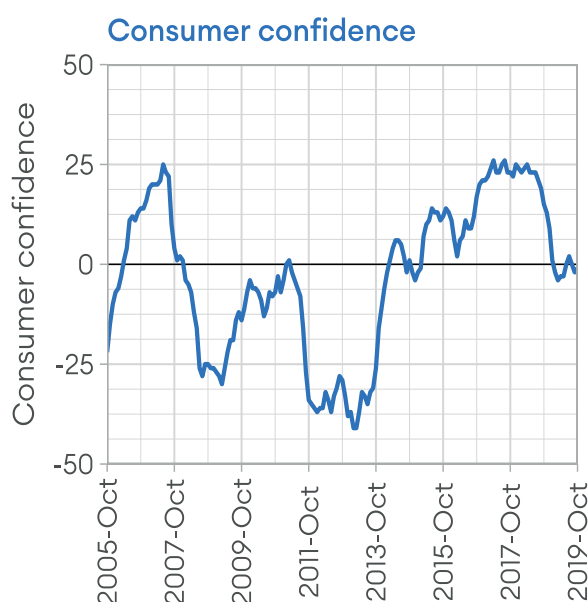
- More Dutch consumers think it is the right time to make large purchases -

The number of unemployed people in the labor force increased by an average of 3,000 per month, during 2019-Q3. At the same time, the labor force increased by an average of 11,000 per month. The unemployment rate increased from 3.4% in June 2019 to 3.5% in September (Figure 4)

The increasing unemployment rate can be partially explained by an increase in the number of people who join the labor force looking for a job but are unable to start immediately. Simultaneously, there are more job losses and unemployed people are slower finding a job than previously. This means that unemployment inflow is increasing and unemployment outflow is declining.

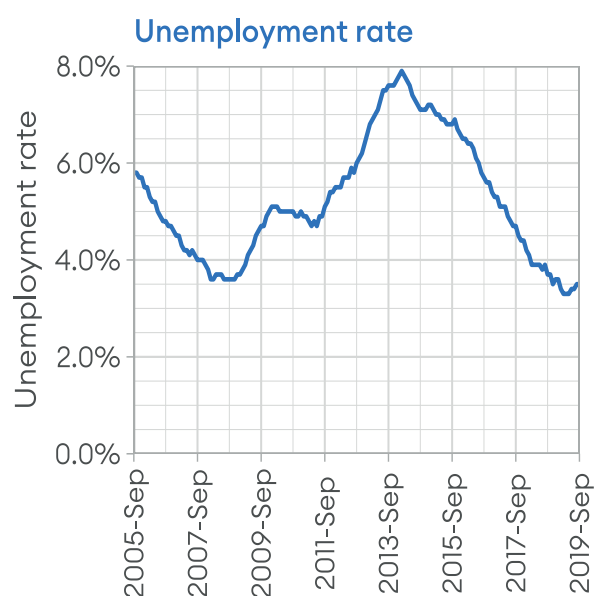
- The government parties all agree that measures must be taken as the nitrogen crisis adversely affects construction workers -

It is possible that the unemployment rate, especially in the construction sector, will increase temporarily in the coming months due to the 'nitrogen crisis'. The Dutch coalition government has indicated that they are ready to take measures [to help establish a safety net](#).



Source: Dynamic Credit, CBS

Figure 3: As of October 2019.



Source: Dynamic Credit, CBS

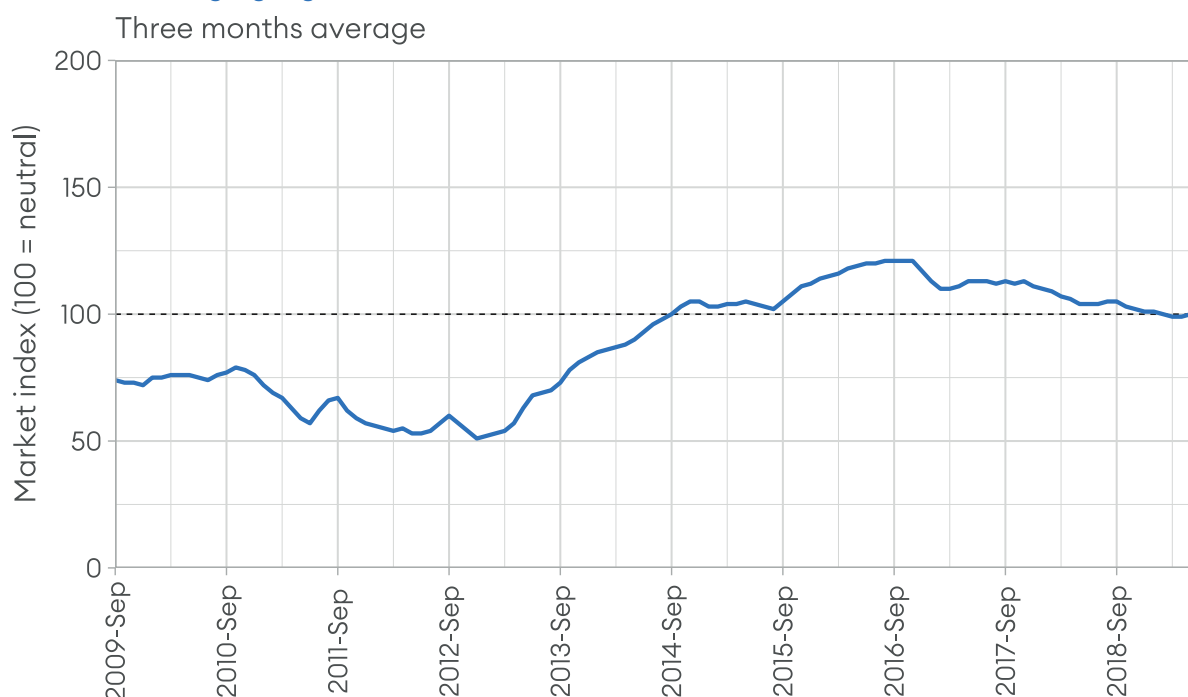
Figure 4: As of September 2019.

Dutch housing market update

Vereniging Eigen Huis¹ (“VEH”) measures consumer confidence in the housing market every month. They do that based on questions about interest rates, prices, and the general housing market. Over the past 2 months, the indicator has increased from 100 in June to 102 in August 2019 (Figure 5). In comparison, the index was at 105 in September 2018. The indicator can take values ranging from 0 to 200, 100 indicating a neutral value. A higher value indicates a more positive sentiment.

- More starters, in spite of lower rates, do not think it is a good time to buy a house as limited supply and high prices makes it hard to find a suitable place -

Vereniging Eigen Huis Market Indicator



Source: Dynamic Credit, Vereniging Eigen Huis

Figure 5: Vereniging Eigen Huis Market Indicator. As of September 2019

More than half (53%) of the first-time buyers do not think it is a good time to buy a home (was 43% in August 2018). The high prices, the poor affordability and the limited supply of houses for sale still make it very difficult for starters to find a suitable home. A quarter of those moving on now think it is an unfavorable time to buy another house.

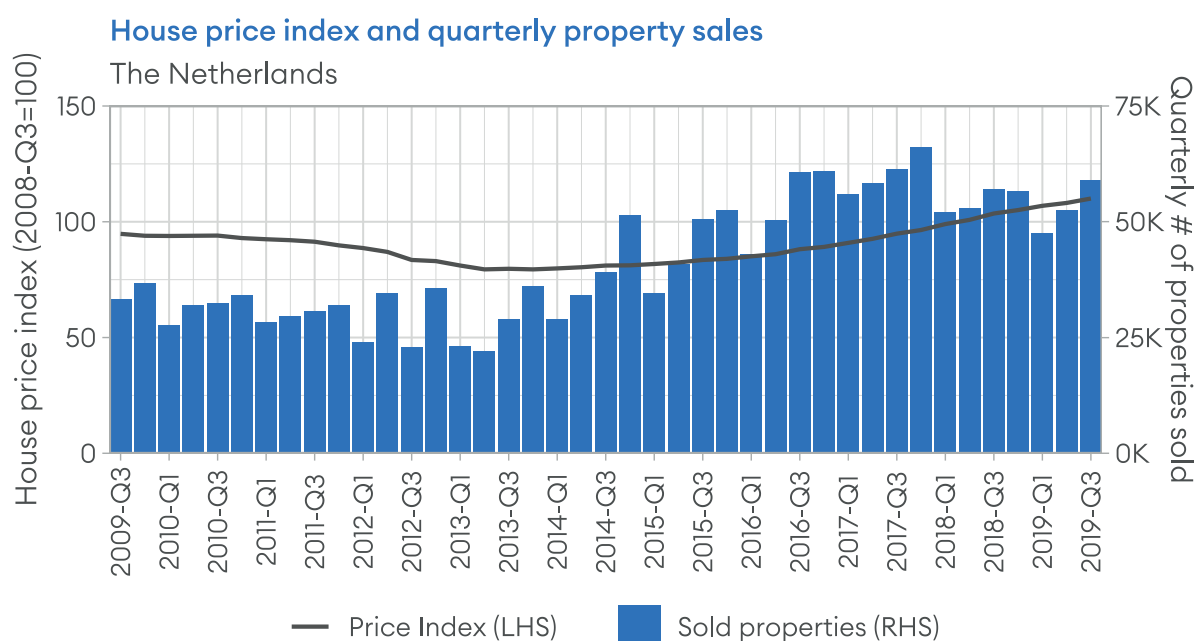
- 80% of the people in the suburbs around Amsterdam, Rotterdam and The Hague have little faith in finding an affordable home -

¹ [Eigen Huis Market Indicator 2019 - August](#)

House prices and property sales

The CBS House Price Index ("HPI") increased 1.8% over 2019-Q3 and 6.3% YoY. This compares to house price increases of 1.1% QoQ and 7.2% YoY in 2019-Q2. Close to 59,000 properties were sold during 2019-Q3, a 12.2% QoQ increase and a 3.5% YoY increase (see Table 1 for regional differences).

- House prices are still increasing but the pace is slowing down -



Source: Dynamic Credit, CBS

Figure 6: House Price Index of the Netherlands (2008-Q3=100) and monthly property sales.

Regional differences

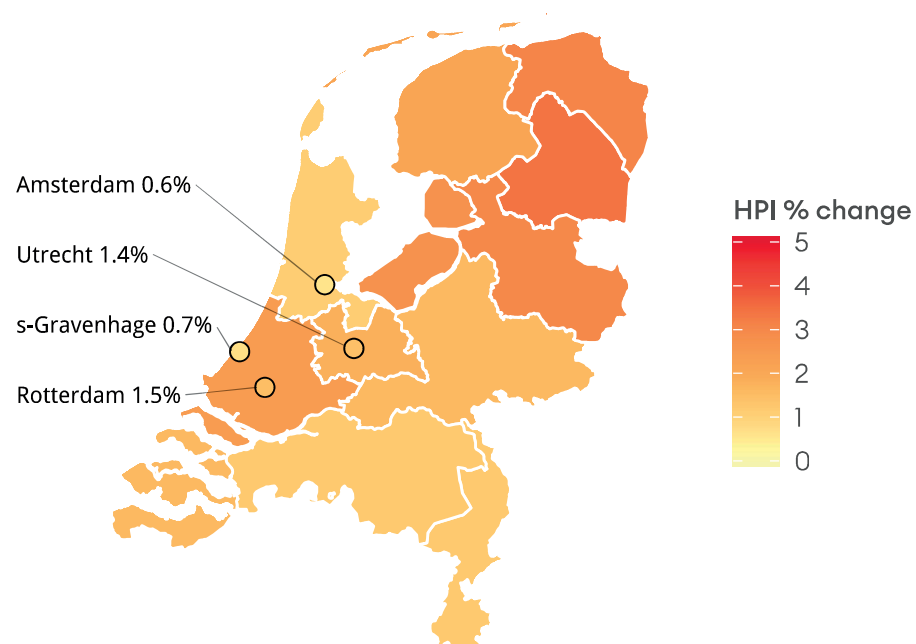
After a long period of continued divergence between the main 4 municipalities and the rest of the country, the trend is changing. Prices in all of the 4 largest cities are now increasing at a below national average pace (Table 1). Prices in Drenthe (3.4 % QoQ) and Groningen (3.1% QoQ).

- Price increases in the Randstad are quickly slowing down -

Leasehold decision in Amsterdam

In Amsterdam, home owners have until end of the year to arrange the land lease at relatively favorable conditions. The Dutch Financial Times [wrote an article](#) in which they mention that many people have yet to arrange the land lease at favorable conditions. We will follow the situation in the coming months as many people are expected to arrange it in the coming months. Processing times are expected to be longer than a year. Annual costs for the land lease could increase significantly if home owners do not arrange it before the end of the year.

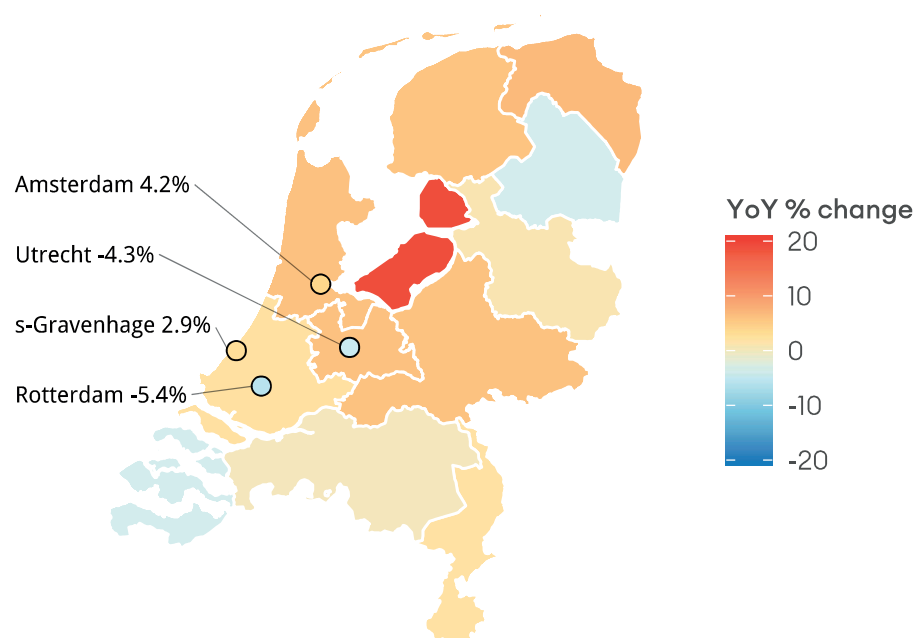
House Price Index QoQ change



Source: Dynamic Credit, CBS

Figure 7: Dutch House Price Index QoQ % change. 2019-Q3.

Number of sold properties YoY change

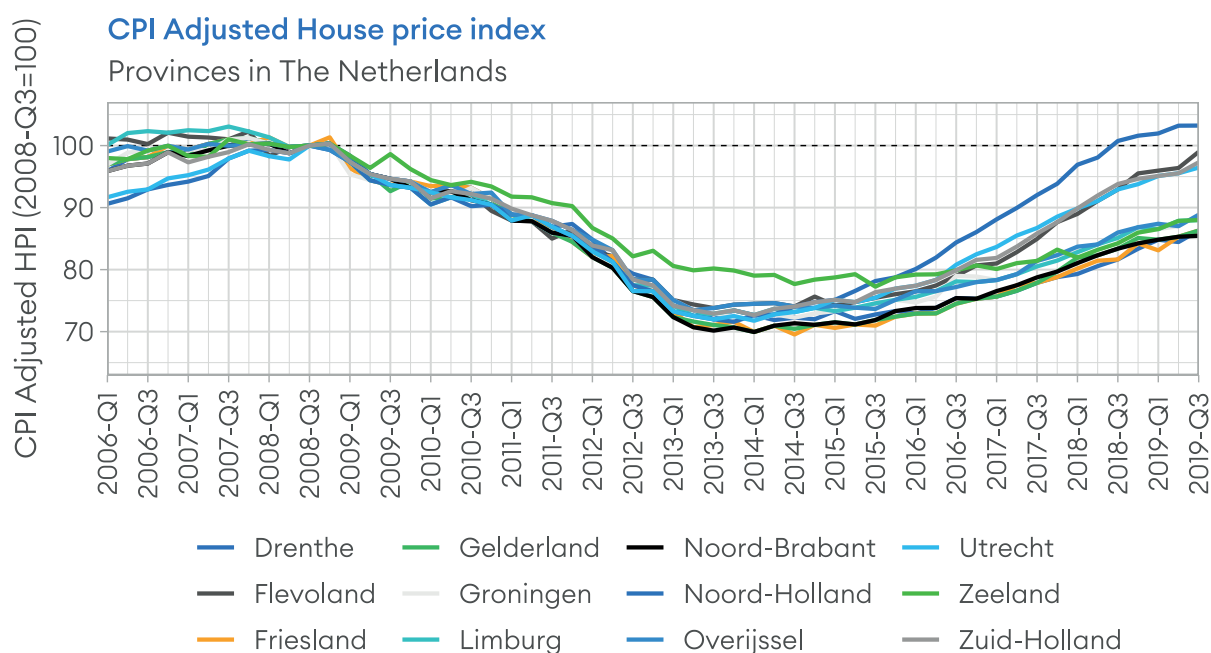


Source: Dynamic Credit, CBS

Figure 8: Sold properties YoY % change. 2019-Q3 .

Area	Type	HPI (2008-Q3=100)	CPI adjusted HPI (2008-Q3=100)	YoY HPI %	QoQ HPI %	# Sold in quarter	YoY Sold %	QoQ Sold %
The Netherlands	Country	110.0	93.1	6.3	1.8	58,935	3.5	12.2
Flevoland	Province	117.1	99.1	9.2	2.7	1,750	19.0	18.2
Drenthe	Province	102.9	87.1	8.6	3.4	1,799	-3.5	6.9
Friesland	Province	102.4	86.6	8.0	2.1	2,354	5.9	9.2
Zeeland	Province	105.0	88.8	7.4	1.6	1,500	-3.5	8.8
Groningen	Province	105.7	89.4	6.6	3.1	2,031	6.7	11.4
Overijssel	Province	105.5	89.3	6.5	3.0	3,727	0.9	8.2
Gelderland	Province	102.6	86.8	6.5	1.6	6,996	6.0	14.1
Zuid-Holland	Province	115.1	97.4	6.5	2.4	12,216	2.2	14.4
Limburg	Province	104.6	88.5	6.0	1.2	3,550	2.0	8.6
Utrecht	Province	114.0	96.5	5.8	1.8	4,717	6.1	15.2
Noord-Brabant	Province	101.8	86.1	5.8	1.2	8,499	0.0	8.0
Noord-Holland	Province	122.5	103.6	5.4	1.1	9,796	6.1	15.4
Utrecht	Municipality	137.5	116.3	8.5	1.4	1,281	-4.3	18.0
's-Gravenhage	Municipality	126.5	107.0	6.6	0.7	1,896	2.9	21.0
Rotterdam	Municipality	137.6	116.4	5.6	1.5	1,836	-5.4	21.6
Amsterdam	Municipality	147.8	125.1	3.8	0.6	2,680	4.2	13.1

Table 1: House prices and number of property sales changes in Dutch provinces and major municipalities 2019-Q3. Source: CBS.



Source: Dynamic Credit, CBS

Figure 9: CPI Adjusted House price index of provinces in the Netherlands (2008-Q3=100). The data is indexed as of 2008-Q3 because this marks the pre-crisis high for the unadjusted House Price Index.

3. Owner-Occupied Mortgages

Interest rate developments

Across all major risk classes and all major fixed rate periods, the top six most competitive rates decreased from the end of 2019-Q2 to the end of 2019-Q3 by 37 bps on average. The relatively popular 100% LTV classes generally had larger decreases than other LTV classes meaning that the spread pick-up for high LTV versus low LTV continued to decrease. Rates for the 20-year fixed rate period decreased by 55 bps on average during the quarter, the most of the 4 major fixed rate periods. The 5-, 10-, and 30-year fixed rate periods decreased by 19, 31, and 44 basis points respectively across risk classes on average. For an overview of the evolution of mortgage rates, see Table 2 below.

- Mortgage rates decreased sharply during the end of the quarter -

Mortgage rate development for average of top 6 mortgage rates						
Fixed rate period	Risk class	2018-09-30	2019-06-30	2019-09-30	QoQ	YoY
5-year	NHG	1.26%	1.23%	1.03%	-0.20%	-0.23%
	60% LTV (non-NHG)	1.34%	1.30%	1.15%	-0.16%	-0.19%
	80% LTV (non-NHG)	1.42%	1.42%	1.25%	-0.17%	-0.17%
	100% LTV (non-NHG)	1.78%	1.74%	1.50%	-0.24%	-0.29%
10-year	NHG	1.68%	1.55%	1.22%	-0.33%	-0.46%
	60% LTV (non-NHG)	1.74%	1.60%	1.29%	-0.31%	-0.45%
	80% LTV (non-NHG)	1.82%	1.71%	1.42%	-0.29%	-0.41%
	100% LTV (non-NHG)	2.17%	2.00%	1.67%	-0.33%	-0.50%
20-year	NHG	2.26%	2.16%	1.69%	-0.47%	-0.57%
	60% LTV (non-NHG)	2.36%	2.27%	1.74%	-0.53%	-0.61%
	80% LTV (non-NHG)	2.46%	2.39%	1.81%	-0.58%	-0.65%
	100% LTV (non-NHG)	2.75%	2.60%	1.98%	-0.62%	-0.78%
30-year	NHG	2.49%	2.43%	2.05%	-0.38%	-0.44%
	60% LTV (non-NHG)	2.58%	2.51%	2.11%	-0.40%	-0.47%
	80% LTV (non-NHG)	2.70%	2.65%	2.18%	-0.47%	-0.52%
	100% LTV (non-NHG)	2.95%	2.84%	2.35%	-0.49%	-0.59%

Table 2: Average top-6 mortgage rates (excluding action rates) for mortgage loans with different fixed rate periods for four risk classes. It should be noted that we made minor adjustments to the definition of action rates during 2019-Q3. All rates in the table have been calculated using the new definition.

For a breakdown of the rates (compared to swap rates), see Figure A5 to Figure A8 in the Appendix.

- The spread pick-up for high LTV continued to decrease -

Spread developments¹

The table and graphs below show spreads over swaps for the 5-, 10-, 20- and 30-year fixed rate periods for NHG and various non-NHG mortgage loans. For a more detailed view of the rate decomposition and spread evolution throughout time, please see Figure A1 to A8 in the Appendix.

The information in the table/graphs can be interpreted as a representative gross spread for newly originated Dutch residential mortgage loans over time.

Spread development for average of top 6 mortgage rates						
Fixed rate period	Risk class	2018-09-30	2019-06-30	2019-09-30	QoQ	YoY
5-year	NHG	0.99%	1.58%	1.52%	-0.05%	0.54%
	60% LTV (non-NHG)	1.07%	1.65%	1.64%	-0.01%	0.57%
	80% LTV (non-NHG)	1.15%	1.76%	1.75%	-0.02%	0.59%
	100% LTV (non-NHG)	1.52%	2.08%	1.99%	-0.09%	0.47%
10-year	NHG	0.93%	1.61%	1.56%	-0.06%	0.62%
	60% LTV (non-NHG)	0.99%	1.66%	1.63%	-0.04%	0.63%
	80% LTV (non-NHG)	1.08%	1.77%	1.76%	-0.02%	0.67%
	100% LTV (non-NHG)	1.44%	2.08%	2.01%	-0.06%	0.57%
20-year	NHG	1.11%	1.90%	1.79%	-0.11%	0.68%
	60% LTV (non-NHG)	1.21%	2.01%	1.84%	-0.17%	0.63%
	80% LTV (non-NHG)	1.32%	2.14%	1.91%	-0.23%	0.59%
	100% LTV (non-NHG)	1.63%	2.35%	2.08%	-0.27%	0.45%
30-year	NHG	1.27%	2.09%	2.09%	0.00%	0.82%
	60% LTV (non-NHG)	1.36%	2.18%	2.15%	-0.03%	0.79%
	80% LTV (non-NHG)	1.49%	2.32%	2.23%	-0.09%	0.74%
	100% LTV (non-NHG)	1.74%	2.53%	2.41%	-0.12%	0.66%

Table 3: Spread of the average top-6 mortgage rates (excluding action rates) over duration matched swap rates for four risk classes. It should be noted that we made minor adjustments to the definition of action rates during 2019-Q3. All spreads in the table have been calculated using the new definition. Source: Dynamic Credit, Hypotheekbond

- Spread levels are higher than a year ago but have decreased recently -

Key observations

- The average QoQ decrease in spread, across all major risk classes and all major fixed rate periods (Table 3) was 8 bps. The moves in spreads result from large decreases (29 bps) in swap rates but even greater decreases in mortgage rates (37 bps) on average.
- Duration matched swap rates for the 20- and 30-year fixed rate periods are more than 120 bps lower than they were at the end of 2018-Q3.

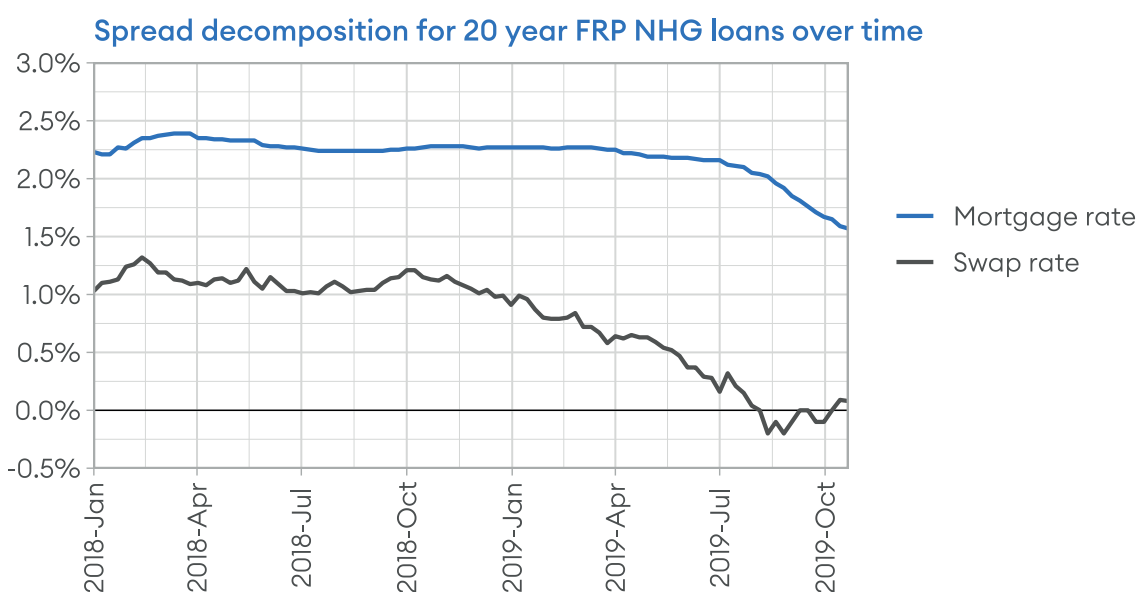
- The spread decrease has been significant as rates are catching up with swap movements -

¹ The EUSWxV3 swap is used, which uses quarterly resets and the floating leg is 3-month EURIBOR.

Spread levels started normalizing in August

As can be seen in the chart below, the quarter was really a story of two ends. Spread levels increased over the summer, as swap rates dropped quickly but mortgage providers only adjusted rates marginally. Spreads, in turn, reached very high levels. In August, mortgage providers really started responding. Considering historical spread levels, it is not surprising that markets have reacted as the levels towards end of July were very high.

- Swap rates have decreased a lot since October 2018, but mortgage rates only really started to respond in August 2019 -



Source: Dynamic Credit, Hypotheekbond

Figure 10: Dutch mortgage rates often react to swap rate movements with some delay.

After many weeks of rate decreases, mortgage providers were less active in terms of rate decreases during the last week of October as mortgage spreads have reverted levels that are more in line with historical averages.

Increasing competition¹

The decrease in rates is potentially explained by new originators who entered the market in 2019-Q3. The following Dutch originators entered the market during the quarter:

HollandWoont

HollandWoont is a label from the same family as Robuust, IQwoon and Hypotrust as the distribution is outsourced to Conneqt. HollandWoont is only active in the NHG risk class at this moment.

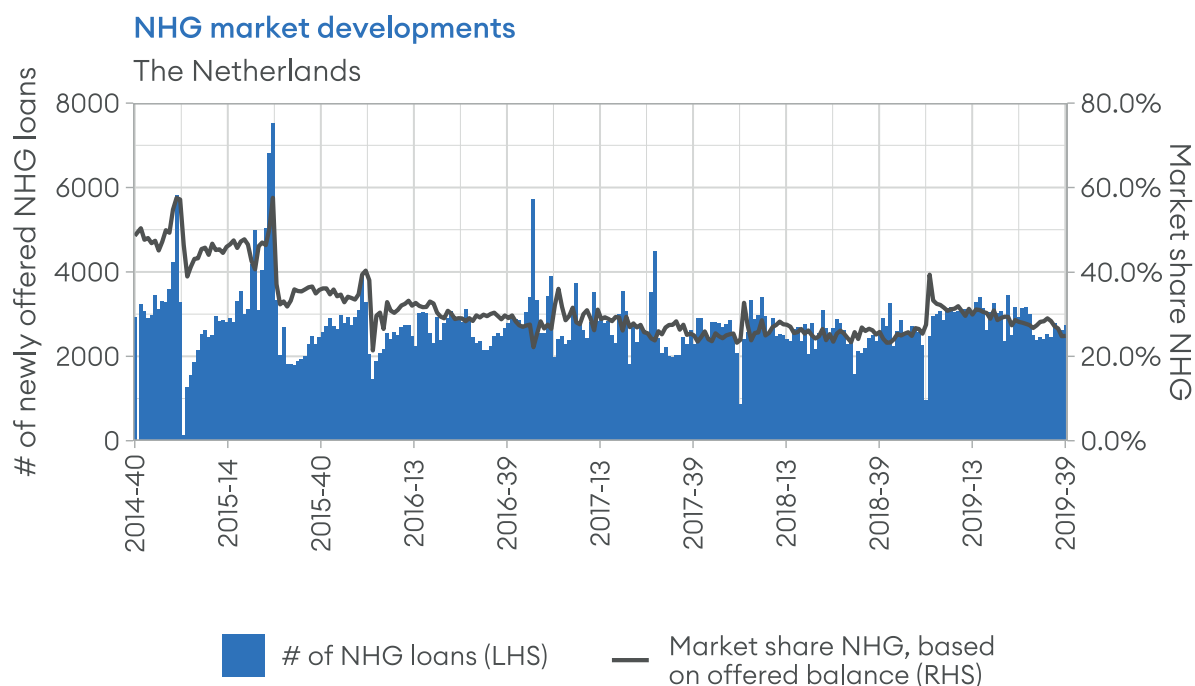
Hypotrust - Vrij Leven Hypotheek

BAWAG PSK, one of the largest banks in Austria, is the funder behind this label. The label is mainly competitive in the 10-year fixed periods and targets the NHG and low LTV risk classes.

¹ <https://www.infinance.nl/artikel/hypotrust-lanceert-een-echt-startersproduct/>

New NHG guarantees

Data from the Mortgage Data Network (“HDN”) shows that over 2019-Q3, 35,520 NHG loans with a total balance of EUR 6.9 bn were offered through its network (7.5 bn in 2019-Q2). This corresponds to an NHG market share of 27.2% in terms of mortgage loans balance (29.5% in 2019-Q2). As can be seen in Figure 11 below, it is generally the case that the NHG share increases in January. This is because the NHG limit is typically increased in January.



Source: Dynamic Credit, HDN

Figure 11: Number of new NHG guarantees and market share of NHG loans as a percentage of total originated balance through time. The x-axis refers to year and week number.

- Low number of NHG claims submitted in 2019-Q2 -

Loss declarations

The number of loss declarations submitted to WEW decreased from 291 in 2018-Q2 to 102 in 2019-Q2, a decrease of two thirds. The NHG payout ratio of processed declarations decreased from 89.5% in 2018-Q2 to 81.1% in 2019-Q2¹. In 2019, WEW changed the payout ratio calculation methodology by using the payout amount over the submitted declaration as opposed to the suretyship as calculated by the WEW. The foundation mentions that the calculations should be equivalent but the significant difference YoY (minus 8.4 percentage points) raises suspicion. We are in discussion with WEW to investigate how this change could have happened.

¹ [NHG - Quarterly report Q2-2019, published with one quarter delay](#)

Expected NHG changes in 2020

Annually the criteria for obtaining an NHG loan are revised by WEW. They provide a safety net for the borrower and the lender when the borrower gets into payment issues due to an unexpected change in circumstances (such as unemployment or a relationship ending).

Lower NHG premium

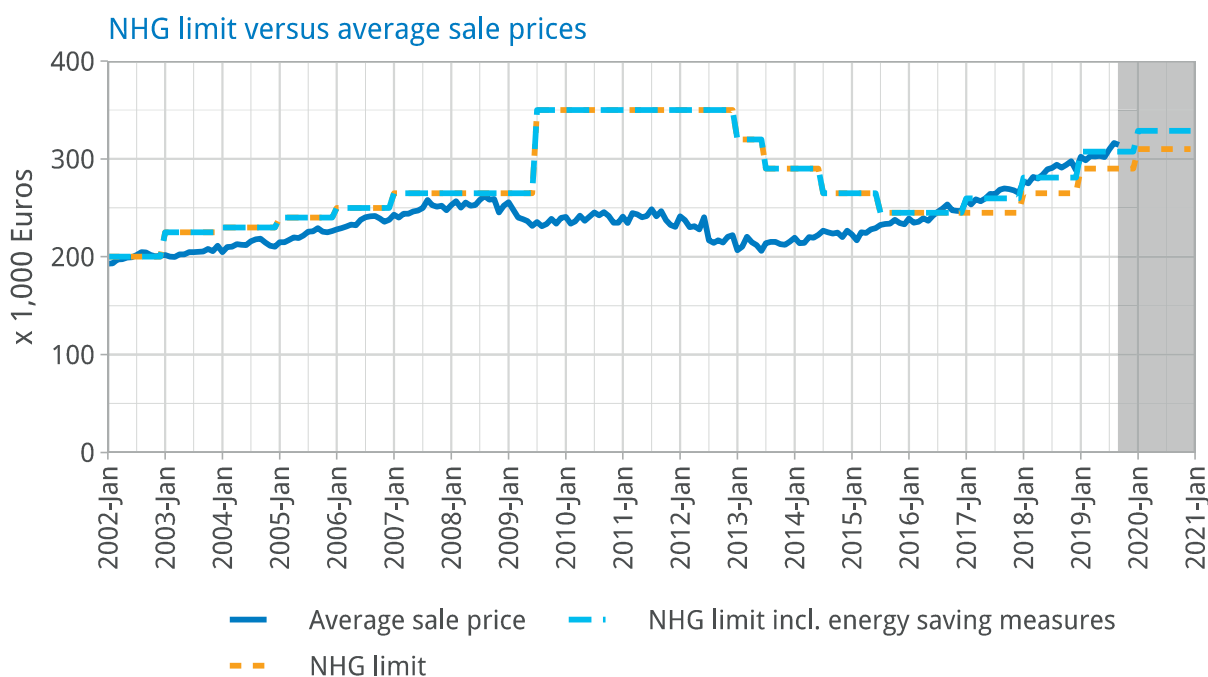
The NHG premium will be lowered from 0.9% in 2019 to 0.7% in 2020. Furthermore, NHG announced a change in the calculation of the premium for borrowers that have an existing NHG-backed mortgage loan which they want to refinance. As of 1 January 2020, borrowers who have an existing NHG-backed mortgage and want to refinance it with a new one, will only have to pay a premium over the increased loan amount. The borrower and the new mortgage lender will obtain a full NHG guarantee for the maximum of 30 years for the whole new NHG-backed mortgage loan.

Higher NHG limit

WEW announced that the NHG limit will be increased from EUR 290,000 in 2019 (EUR 307,400 when including energy saving measures) to EUR 310,000 (EUR 328,600 when including energy saving measures) by 1 January 2020. This means more people buying a home or refinancing their existing mortgage loan will be eligible for an NHG-backed mortgage loan.

- More NHG applications are expected in 2020-Q1 due to higher limit -

As can be seen below, the NHG limit has generally been higher than the average property price. It was heavily increased during the crisis to stimulate the market but has failed to follow steep price increases in the market since then. An increased limit has been added since 2017 for borrowers who opt for energy saving measures.



Source: CBS, NHG

Figure 12: Average sales prices of Dutch houses and the NHG limit over time.

EBA Draft Guidelines on loan origination and monitoring

Due to the increasing focus within the European Union on credit risk and the aim to improve credit quality and prevent new flows of non-performing loans, the European Banking Authority (EBA) issued Draft Guidelines on loan origination and monitoring¹ on 19 June 2019.

The draft guidelines build on the existing national experiences as they address shortcomings in policies and practices. In addition, the guidelines reflect recent supervisory priorities and policy developments. The draft guidelines cover the practices that must be followed while granting of credit facilities and subsequently monitoring these credits. Specifically, the draft guidelines include: rules regarding the governance and control framework of credit institutions; criteria and documentation requirements for loan origination; rules regarding pricing of loans; valuation approaches; and criteria for the ongoing monitoring of existing credit facilities.

The guidelines will be applicable to all credit institutions, including non-bank mortgage credit providers, within the EU and will have an impact on both existing credit facilities and new ones. The consultation period ended 30 September 2019 after which the EBA started its deep dive analysis. The guidelines will apply from 30 June 2020.

The requirements as set out in the draft guidelines are expected to increase origination and monitoring costs. The costs are borne by the lender but are expected to ultimately be passed on to the borrower. Significant requirements for the loan origination process are:

- Retirement age: the lender is required to take into consideration pension income if the borrower retires during the lifetime of the loan. With default maturity at 30 years for 99% of consumers, this would imply testing affordability on pension income from 37 years old. For such time frame, it is unlikely that a reasonable estimate of the pension can be made.
- Affordability: the draft guidelines prescribe that a lender takes into account the actual obligations and living expenses of the consumer. This would imply a break from the current affordability system (that prescribes a maximum DTI for an income and interest rate combination without taking into account current living expenses) in the Tijdelijke Regeling Hypothecair Krediet.
- Automated valuation models: As the AVM market in The Netherlands develops and accuracy increases, there are more and more lenders that allow this type of valuations, e.g. Calcasa or even the property tax assessment WOZ, in the origination process. The draft guidelines prescribe that AVMs cannot be used in the origination process because it could cause uncertainty in the property value.

The most important monitoring development is that a lender needs to attempt to actively manage the credit risk of the loan portfolio by assessing compliance to covenants and conditions: Lenders are required to monitor the adherence to loan covenants and terms and conditions at the moment of origination throughout the life of the loan. There is no borrower friendly mechanism for a lender to adhere to this requirement. For performing borrowers, this could be interpreted as the lender invading their privacy because there is no reason for the lender to get in touch. Also, the ultimate measure would be for the lender to end the loan which could have major impact for the borrower.

Needless to say, Dynamic responded to the draft guidelines. It is to be seen how the final guidelines are formulated when they come into effect in June 2020.

¹ [EBA Consultation Paper - Draft Guidelines on loan origination and monitoring](#)

4. Buy-to-let Mortgages

Dynamic Credit launched its consumer buy-to-let platform in the Netherlands^{1,2} in 2019. Besides the unique feature of offering borrowers an LTV of 90%, the product also sets itself apart by offering a 30-year fixed rate period. Besides that, it allows for equity take-out in case this is used for acquiring real estate.

- Rate decreases were similar to decreases for owner-occupied mortgages -

As can be seen in Table 4 below, the average rates decreased. It should be noted that Dynamic Credit is the only active lender in the high LTV (>80%) segments.

Market rate and spread development for consumer buy-to-let rates							
Fixed rate period	LTV	Market rates			Spreads		
		2019-06-30	2019-09-30	QoQ	2019-06-30	2019-09-30	QoQ
1-year	50%	2.85%	2.60%	-0.25%	3.30%	3.10%	-0.20%
	60%	2.95%	2.71%	-0.24%	3.39%	3.21%	-0.18%
	70%	2.95%	2.72%	-0.23%	3.39%	3.22%	-0.17%
	80%	3.23%	2.95%	-0.28%	3.67%	3.45%	-0.22%
	90%	3.40%	3.30%	-0.10%	3.85%	3.80%	-0.05%
5-year	50%	2.93%	2.65%	-0.28%	3.29%	3.15%	-0.14%
	60%	3.04%	2.74%	-0.29%	3.39%	3.24%	-0.15%
	70%	3.04%	2.77%	-0.27%	3.39%	3.27%	-0.12%
	80%	3.28%	3.03%	-0.24%	3.63%	3.53%	-0.10%
	90%	3.45%	3.35%	-0.10%	3.81%	3.85%	0.04%
10-year	50%	3.16%	2.82%	-0.34%	3.25%	3.17%	-0.08%
	60%	3.25%	2.93%	-0.32%	3.34%	3.28%	-0.06%
	70%	3.25%	2.94%	-0.31%	3.34%	3.29%	-0.05%
	80%	3.54%	3.08%	-0.47%	3.64%	3.43%	-0.21%
	90%	3.90%	3.50%	-0.40%	4.01%	3.86%	-0.15%
20-year	50%	3.42%	2.95%	-0.47%	3.20%	3.08%	-0.12%
	60%	3.47%	3.03%	-0.44%	3.25%	3.16%	-0.09%
	70%	3.47%	3.08%	-0.39%	3.25%	3.21%	-0.04%
	80%	4.00%	3.30%	-0.70%	3.82%	3.45%	-0.37%
	90%	4.20%	3.70%	-0.50%	4.02%	3.86%	-0.17%

Table 4: Interest rate and spread development for consumer buy-to-let rates in the Netherlands.

Source: Dynamic Credit, Hypotheekbond

New standard for appraisals will improve the application process

This quarter, our product manager, Sietse van den Wijngaart, [was interviewed by In Finance](#) as he mentioned how lenders in the buy-to-let space have made further improvements in setting a new standard for the validation of appraisals.

¹ www.dynamiccredit.com/dutch-consumer-buy-to-let

² www.dynamiccredit.nl/verhuurhypotheek

Rent Increases¹

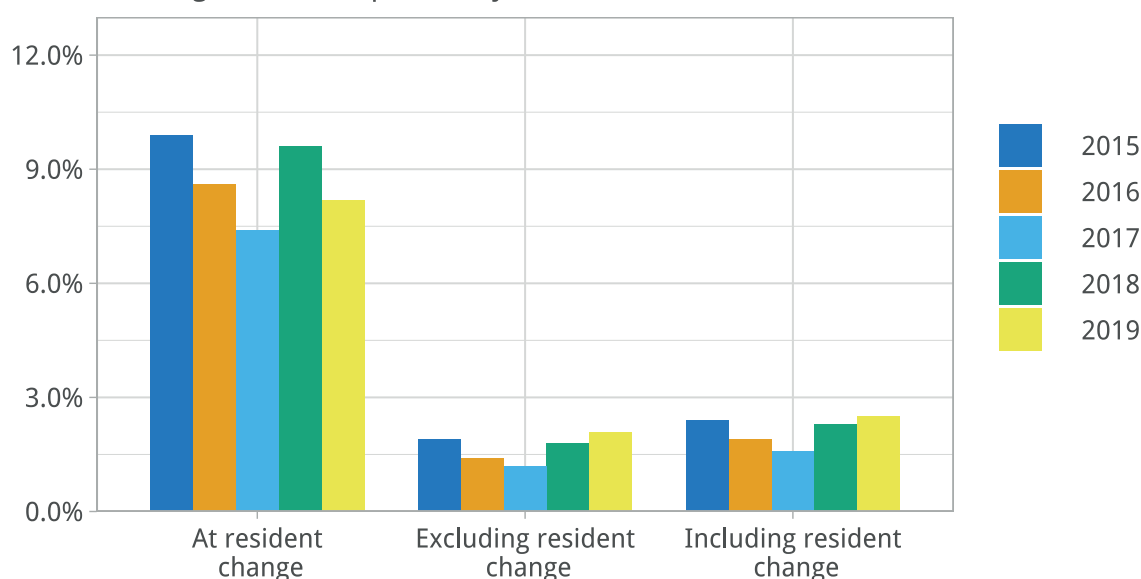
CBS reported that rental prices increased by 2.5% YoY in July 2019 (was 2.3% YoY in July 2018). The increases vary greatly by the type of tenant. For example, increases for social housing owned by housing corporations were only 2.0% YoY (was 1.7%) whereas free sector rent properties with new tenants had increases of 8.2% YoY (was 9.6%).

- Rents for existing tenants increased faster in 2019 than in 2018 -

For regulated rental properties, the maximum rent increase is the rise in consumer prices in the previous year plus an income-related supplement. In 2019 this maximum rent increase is 4.1% or 5.6%, depending on whether the tenant earns more or less than EUR 42,436 per year. For free sector rent, it is common market practice to allow for a maximum annual increase which is derived from the increase in the consumer price index (CPI). Consumer prices, in the Netherlands, have increased faster in 2019 due to an increase of the low VAT rate and higher energy taxes. In turn, rental prices have also increased faster. The YoY increase in rent of 2.5% (including resident change) was the highest in 5 years.

Average rent increase and change of residents

% change relative to previous year



Source: Dynamic Credit, CBS

Figure 13: YoY rent increases in the Netherlands as of July 2019

- Landlords often benefit tremendously when old tenants are replaced by new tenants who pay a much higher rent -

Amsterdam has been the leader in terms of rent increases for the past years and shows a YoY increase of 3.4%, followed by a 3.2% increase in Rotterdam. The rent prices in The Hague and Utrecht increased by 2.5% and 2.4% respectively. In terms of provinces, Noord-Holland shows the highest increase of 3.1%, of which 0.6% can be explained by the change of tenants. This growth can to a large extent be explained by Amsterdam. Drenthe had the lowest increase in rental prices, with 1.9% of which 0.1% was explained by changing tenants.

¹ <https://www.cbs.nl/en-gb/news/2019/36/rent-increase-2-5-percent-in-2019>

5. Funding Update

Mortgage Bond launched by Dynamic Credit

Dutch Authority for the Financial Markets has approved the [prospectus](#) for the Dynamic Credit Mortgage Bond programme¹. Through this, a new way of funding Dutch mortgage loans is officially ready for use. It is now possible for institutional investors to invest in a portfolio of Dutch mortgage loans in a simple, transparent and low cost way. The Mortgage Bond will appear as one line in the administration of an investor and can easily be traded and settled. Listing on a stock exchange is optional and can be achieved in a straightforward way.

- More funding needed for the Dutch mortgage market -

With Dutch banks increasingly restricted due to capital constraints, Dutch insurance companies approaching the maximum exposure to Dutch mortgage loans and Dutch pension funds reaching their target allocations to this asset class, funding from other sources, including international investors, is necessary to finance the demand for mortgage loans in the Netherlands.

- The mortgage bond allows (international) investors to get exposure to an asset class with attractive return characteristics in an easy and straightforward way -

Investors can choose the specific type of segments they find most attractive

The way the Dynamic Credit Mortgage Bond works is straightforward: an investor can choose which segments of the mortgage market (combinations of risk classes and fixed rate periods) they want to invest in. Through the bijBouwe label these loans are then originated. Alternatively, an existing portfolio of bijBouwe loans can be bought from another investor.

The loans will then be put into a separate compartment of DCMB Programme BV, a dedicated bond issuing entity. Notes are then created on just this compartment. This way, investors can get the exposure they want, in a simple and transparent investment product. Interest and principal payments on the portfolio of mortgage loans are passed through to the Mortgage Bond holders.

- The investor can choose the fixed rate period and risk class segments they find most attractive -

On the next pages, we explain why Dutch mortgages should not be compared with the more well-known Danish mortgage bonds

- Dutch mortgage bonds have much higher yields than Danish mortgage bonds and are quite different -

¹ afm.nl/professionals/registers/meldingenregisters/goedgekeurde-prospectussen/details?id=22599

Comparing Danish and Dutch rates

Jyske Bank broke international headlines in August 2019 when they started offering mortgages with a 10-year maturity and a coupon rate of -0.5%. Many (Dutch) newspapers wrote articles about it and speculations started about whether negative mortgage rates in the Netherlands could be a possibility. Below we mention some of the key differences between Dutch and Danish mortgage rates. In the examples below, Danish mortgage bonds refers to the 30-year fixed rate period annuity bonds.

- “Game of Kroner” causing negative yield curve on Danish govies -

Different currencies and costs of funding

As the Danish National Bank wants to keep the Krone pegged to the euro, they generally keep the key rate below that of the ECB. The Danish deposit rate is currently -0.75% whereas the ECB deposit rate is -0.5%. Denmark became [the first developed country](#) in 2019 to have negative yield for all its government bonds. The [Netherlands later followed](#), but at the moment it is the case that Danish govies yield less than Dutch. Market participants have referred to “[Game of Kroner](#)” as the Danish currency has been under attack not long ago. Investors in DKK denominated Danish mortgage bonds would have to consider a hedge, which comes at a cost.

Danish borrowers owe more than what they borrow

When getting a mortgage in Denmark, a covered bond is sold with a fixed coupon. For example, borrowers can choose if they want to pay 0.5% or 1%. Most Dutch borrowers would probably think that the lower interest rate is always better, but that is not always the case. The Danish borrower should consider the price of the bond as well. If a bond is sold for 95, then the borrower only gets 95, but owes 100. Imagine that the 0.5% bond trades at 95, but the 1.0% bond trades at 99. The borrower can never sell bonds for more than par as they are callable at par. This means that, at the time of receiving a loan, the borrower will always owe more than what they get and the yield on the sold bond will, in turn, be higher than the coupon.

Administration margin to cover servicing costs and credit risk

Many newspapers mistakenly believe that borrowers in Denmark only pay the coupon rate. However, that is not the case. Borrowers also pay ‘bidragssatser’ (“administration margin”). Administration margin covers, amongst others, servicing costs, credit risk, and a margin related to capital requirements. The administration margin varies depending on loan-to-value and whether a loan is amortizing or interest-only. Furthermore, the number varies depending on the lender. [The amount is typically between 0.4-1.4%](#).

- Investors in Dutch whole loans are paid a premium as they run additional credit risk compared to investors in covered bonds -

Stricter LTV requirements

100% LTV is the standard in the Netherlands (partly due to very strict income requirements). In Denmark, 80% LTV is the highest borrowers can get. The strict LTV requirements for mortgage loans means that many Danish borrowers have to pay a much higher fee for the additional unsecured loan in case they cannot bring the required own funds. Loan rates for unsecured lending are obviously higher than mortgage rates.

Comparing Danish and Dutch rates - continued

Different offer types

In the Netherlands, mortgage providers are exposed to pipeline risk when extending an offer to a prospective borrower. There are two common offer types in the Netherlands, offer rate (offertrente) and day rate (dagrente). With an offer rate, the borrower will get the rate mentioned in the offer letter. With dagrente, the borrower will get the lowest of the rate in the offer letter and the prevailing rate at the time of origination. It should be noted that the applicant can generally cancel the offer without having to pay compensation to the mortgage provider. In Denmark, borrowers do not have the same optionality. Danish borrowers cannot lock in rates and drop them several months later, free of charge. The deal would be binding if a Danish borrower wants to lock in the rate.

In the Netherlands, borrowers have optionality and lenders have some risk, for which they are compensated. This, in turn, leads to higher rates, all else equal, in the Netherlands.

Portability

Portability has become market standard in the Netherlands, allowing borrowers to take their mortgage loan with them to a new property in case the portability option is in the money. Taking a mortgage to a new property is also possible in Denmark, but often not the chosen option (referring to 30-year fixed rate period loans). Instead, Danish borrowers can benefit from their bond trading below par in other ways. In Denmark, borrowers can always prepay at par (also when the bond is trading above par), but they can prepay below par, in case the bond is trading below par at the time of refinancing. Imagine if a borrower took out a loan with a 30-year fixed rate period a few years ago at 2.5% and rates then increase to 4% one year later, at a time where the borrower chooses to move. The Dutch borrower would want to use portability in such a situation. The Danish borrower could, in such a situation, choose to use portability but could also prepay the bond at well below 90 and take out a new loan at the prevailing market rate (4%) thus benefiting from a lower outstanding principal amount (prepaying below par) and higher tax deduction due to the higher coupon (interest tax deductibility is possible in both countries).

- Dutch investors are compensated via prepayment penalties -

Investors in Dutch mortgages are better protected due to prepayment penalties

As Danish mortgage bonds are callable at par, prepayment rates tend to increase steeply when the call option is in the money. In the past few years, investors in Danish mortgage bonds have thus not been able to yield the same returns as investors in Dutch mortgage loans.

Dutch borrowers generally have to pay prepayment penalties if they want to refinance. Dutch lenders allow for penalty-free prepayment amounts of 10%, as required by law, so prepayments relating to refinances are less common than in Denmark. In case a Dutch borrower wants to refinance, without paying prepayment penalties, they might have to relocate.

Dutch RMBS market: Priced Dutch prime RMBS deals
Four new Dutch prime RMBS deals were closed during 2019-Q3

Issuer	Series	Seller	Class	Euro Amount	Life	FXFL	Coupon	DM	Benchmark	M	SP	F	DBR	Retained	Comments
Sinopel BV	2019	Triodos Bank	A	799	4.9	FX	0.50%				AAA		AAA	Y	WA CLTV 68.9%;
			B	42	6.3	FX	0.00%							Y	WA Seasoning 30m; IO Loans 36.5%; Obligors 3,810; Self-employed 17.7%;
Saecure NHG BV	18	Aegon Insurance	A	512	4.8	FL		27	3 Mo. Euribor		AAA	AAA		N	WA CLTV 84.2%;
			B	33	6.0	FX	0.00%							Y	WA Seasoning 79m;
			C	5	6.0	FX	0.00%							Y	IO Loans 32.7%; Obligors 3,280;
Cartesian Residential Mortgages S.A.	4	Venn Partners	A	346	4.5	FL		51	3 Mo. Euribor			AAA	AAA	N	WA CLTV 95%;
			B	9	5.4	FL		100	3 Mo. Euribor			AA+	AA H	N	WA Seasoning 6m;
			C	9	5.4	FL		135	3 Mo. Euribor			A+	A	N	WA Seasoning 6m;
			D	6	5.4	FL		175	3 Mo. Euribor			BBB-	BBB H	N	889 Obligors;
			E	11		FL			3 Mo. Euribor					Y	IO Loans 33.7%;
			S	8										Y	Self Employed 13.8%;
Green Apple	2019-1	Argenta Spaarbank	A	825	4.8	FL		25	3 Mo. Euribor			AAA	AAA	N	WA CLTV 88.4%;
			B	112	6.6									Y	IO Loans 13.4%;
			C	12										Y	Coverage Ratio: A-2.7x;

Table 5: Priced Dutch RMBS Deals in 2019-Q3. Source: Dynamic Credit, JP Morgan

- 4 RMBS deals were priced in July before issuance slowed down for the rest of the quarter -

ABS comments 2019-Q3

RMBS: Activity in the Dutch RMBS market was slightly subdued compared to 2019-Q2, as only 4 new deals were issued versus 7 deals in 2019-Q2. Total year-to-date distributed Dutch RMBS issuance for 2019 was EUR 5.2bn, 43.5% lower versus the comparable period in 2018, mainly due to no issuance in 2019-Q1.

All deals were issued in July. Obvion issued an STS-compliant RMBS called **Green Storm 2019**. It was sized at EUR 645.2mm. Only the EUR 600mm tranche A was offered to investors and was 2.7x oversubscribed, pricing at a discount margin of 22 bps - 5 bps tighter than the initial price talk. The deal is backed by portfolio of residential mortgages that comply with green eligibility criteria. The weighted average current loan to original market value is 76.8% and 14.5% of the pool has an NHG guarantee.

The second deal was Venn Hypotheken's **Cartesian Residential Mortgages 4**. Four out of the seven tranches of the EUR 388.1mm deal were offered to investors, with tranches A to D pricing at 51 to 175 bps, respectively. The deal had healthy demand which translated into oversubscription levels ranging from 1.4x for the Class A to 2.9 times for the class D. Weighted average current LTV of the mortgage pool is at 95% and interest-only loans comprise 33.7% of the portfolio.

Aegon privately placed the Class A tranche of their 18th deal of the Saecure shelf, **Saecure NHG 18**. The EUR 550 million deal consists of three tranches. Class B and Class C were retained. The class A priced at a discount margin of 29 bps. The deal is secured by a portfolio of prime residential mortgages with weighted average indexed LTV of 96% and 32.7% of interest-only loans.

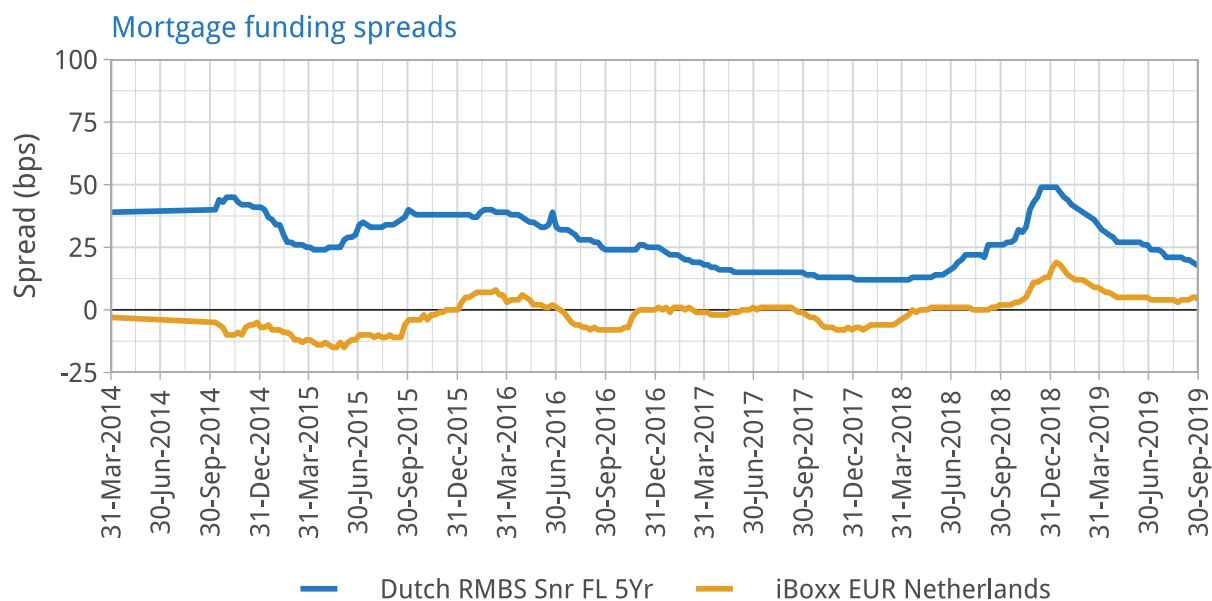
Triodos Bank fully retained their Sinopel deal. The deal consists of 2 fixed rate tranches and has a total size of 841 million.

- After the end of the quarter, Tulp Hypotheken priced their first RMBS -

Starting off 2019-Q4, new Dutch originator Tulp Hypotheken priced **Tulip Mortgage Funding 2019-1** in October. The average seasoning is only 5 months as Tulp only started originating in 2018. A loan pool of EUR 392mm will back the transaction. The pool is characterized by non-NHG (0.4% NHG loans) amortizing loans (7% IO) with an average fixed rate period of 21.8 years. The average indexed LTV is 92.5%.

Covered bonds: Covered bonds: Covered bonds issuance by Dutch banks in the third quarter of 2019 amounted to EUR 0.6bn, bringing the total 2019 YTD issuance to EUR 10.4bn. One sizeable deal was by NN Group. Dutch covered bond benchmark spread ended the quarter at 4 bps, slightly down from their end of Q2 2019 level of 5 bps.

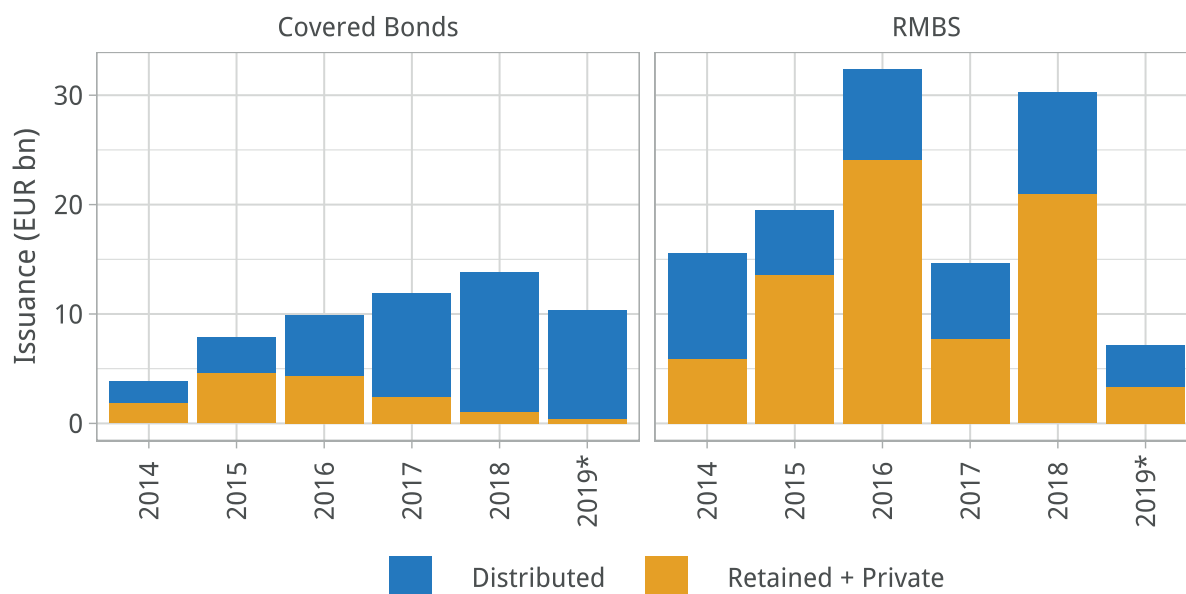
Summary: The continuation of the monetary policy by the ECB is putting downward pressure on both ABS and covered bonds spreads. New supply is easily absorbed and is outweighed by the demand. Benchmark Dutch AAA RMBS spreads ended the quarter at +18 bps, down 8 bps from the end of June.



Source: Dynamic Credit, JP Morgan

Figure 14: RMBS spread refers to indicative mid spread (DM) for representative generic RMBS bonds. iBoxx EUR Netherlands spread refers to spread versus mid swap rates. The data is as of 2019-Q3.

Mortgage funding issuance



* Data up to Q3

Source: Dynamic Credit, JP Morgan

Figure 15: Issuance of Dutch RMBS and covered bonds. The data is as of 2019-Q3.

6. News

ECB

On 12 September 2019, the Governing Council of the European Central Bank met. As expected, following increasing global trade tensions, Brexit uncertainty, and a worrying German economy, the ECB announced that they would re-introduced QE.

The main takeaways from the announcements were:

- The Governing Council decided to decrease the rate on the deposit facility from -0.40% to -0.5%. The interest rate on the main refinancing operations and the rate on the marginal lending facility will remain unchanged at their current levels of 0.00% and 0.25% respectively;
- Net purchases will be restarted under the Governing Council's asset purchase programme (APP) at a monthly pace of €20 billion as from 1 November. The Governing Council expects them to run for as long as necessary to reinforce the accommodative impact of its policy rates, and to end shortly before it starts raising the key ECB interest rates;
- A two-tier system for reserve remuneration was announced, in which part of banks' holdings of excess liquidity will be exempt from the negative deposit facility rate.

The decision to relaunch QE was controversial and commentators, such as the president of DNB, Klaas Knot, [openly criticized the decision](#).

Klaas Knot, president of DNB and member of the ECB's Governing Council:

"The economic slowdown means it is unavoidable that it will take longer before the ECB reaches its inflation aim of below but close to 2%, but this is not to say that this aim is completely out of reach. Neither is there a risk of deflation, nor are there any signs pointing to a euro area-wide recession."

On 24 October 2019, the Governing Council of the European Central Bank met. This was the last meeting for Mario Draghi as Christine Lagarde will take over as the president of the ECB in November. Draghi encouraged governments to take further action by means of fiscal policy

Christine Lagarde

On 17 September 2019, the European Parliament backed Lagarde as the next president of the European Central Bank, the first woman in the post. Lawmakers voted 394 in favor, 206 against and with 49 abstentions. Lagarde participated in an [interview with CNBC](#) on 23 September 2019 in which she discussed her expectations for her new role at the ECB.

- Christine Lagarde:

"If the euro area can strengthen, and there are indications that this could be on the short term horizon, with a real banking union, with a better capital market which has euro area dimensions and good depth, and if there is more of a joint effort to steer the economy of Europe, I think that region of the world will be in good shape...."

Fewer first-time buyers borrow above 90% LTV

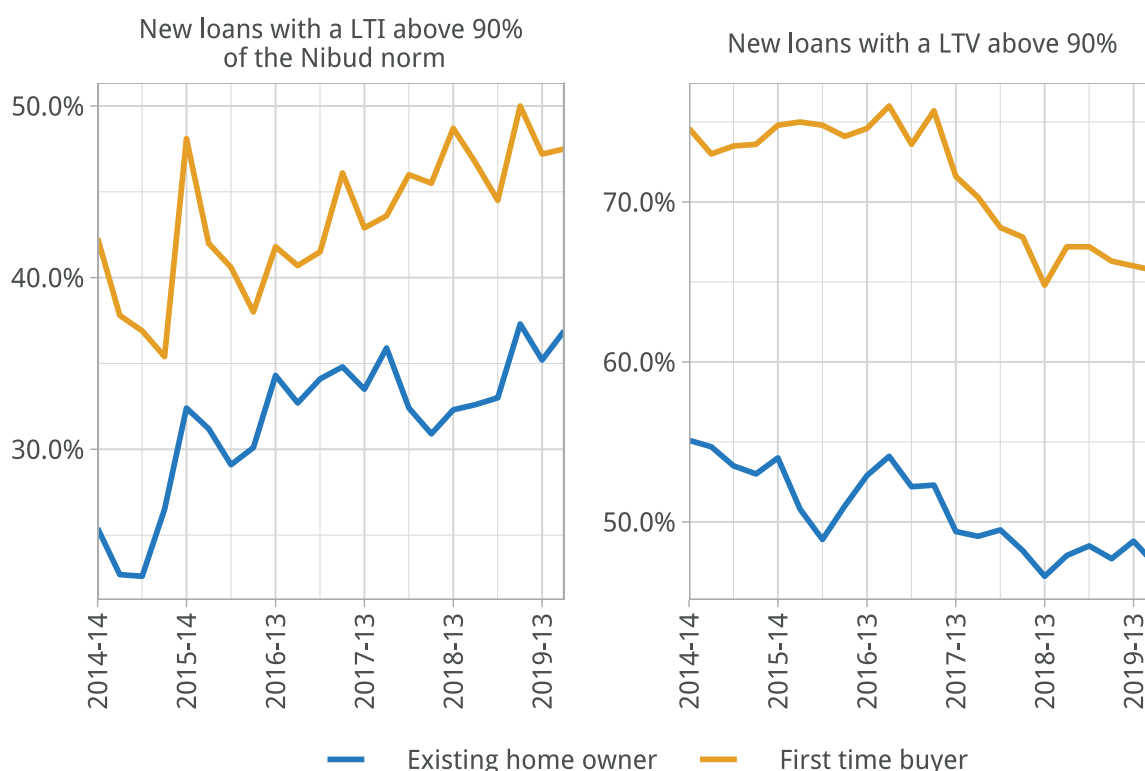
The share of first-time buyers who borrow at least 90% of their maximum loan-to-income ("LTI") capacity, in accordance with Dutch regulation, has been increasing over the past five years from around 38% in 2014 to around 47% in 2019, [as shown by a report published by DNB](#). In contrast, the same report shows that the share of first-time buyers that borrow more than 90% LTV has decreased to 66% in 2019 from around 74% in 2014. A combination of fiscal incentives, due to favorable tax treatments of housing-related gifts, and more borrowers reaching their maximum LTIs and hence using more equity to finance their home, can explain these observations.

For subsequent home buyers, similar trends have been observed, however the share of subsequent buyers borrowing at least 90% if their max LTI capacity or more than 90% LTV is significantly lower than for first time buyers.

- Housing is more affordable than at the previous peak -

It should however be noted, that maximum statutory LTI percentages decrease as interest rates decrease. Furthermore, the steep decrease in interest rates over the past years means that housing is still more affordable than at the previous peak: Calcasa reports¹ that 15.2% of the net income is spent on net mortgage payment versus 27% in 2008.

Percentage of all new mortgage loans



Source: Dynamic Credit, DNB

Figure 16: Percentage of Dutch borrowers above 90% LTV and 90% maximum DTI

¹ <https://www.calcasa.nl/wox-kwartaalbericht>

New construction projects at risk due to nitrogen ruling¹

In our last quarterly report, we discussed how a court ruling about nitrogen pollution could adversely affect construction of new properties. The [PAS method](#) of considering future decreases of nitrogen pollution [was not found eligible by the court](#). In the past three months, the situation has evolved in a full blown 'Nitrogen Crisis', impacting mainly the agriculture and the construction sector. Thousands of farmers protested the regulation, the government body that measures nitrogen pollution, and the measures proposed by politicians to counter the crisis. The construction sector is less organized, but they also have plans for nationwide protests.

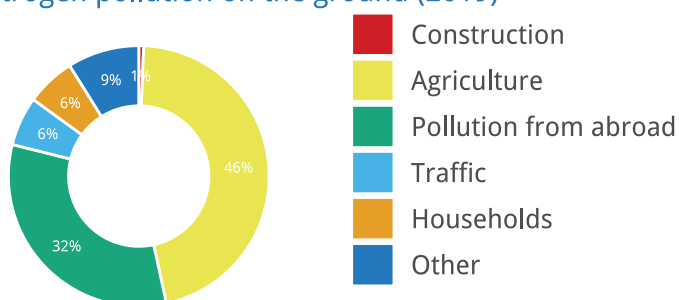
- Dutch farmers brought their tractors as they protested the ruling -

Unrelated, but similar in name, the construction sector is threatened by new, stricter [PFAS](#) pollution regulation implemented in July 2019. PFAS are over 6,000 chemicals that are used in various industrial processes and products. For instance, paint, waterproof raincoats and cosmetics. The regulation is focused on limiting ground pollution from PFAS, prohibiting construction companies from moving or excavating ground. There are speculations that the Dutch government could reduce the strict limit.

- The Dutch government has announced an emergency plan as they try to address a full known nitrogen crisis -

Both the dismissal of the PAS method (nitrogen) and the recently introduced PFAS pollution regulation has severely impacted the order books of the construction companies. Suppliers mention drops between 10% and 40%. Municipalities and provinces are withholding building permits due to the uncertainty about how to handle the new regulation. The Dutch government has announced an emergency plan, worth 150-200 million euros, to address the most urgent problems following the regulation.

Nitrogen pollution on the ground (2019)



Source: Dynamic Credit, RIVM

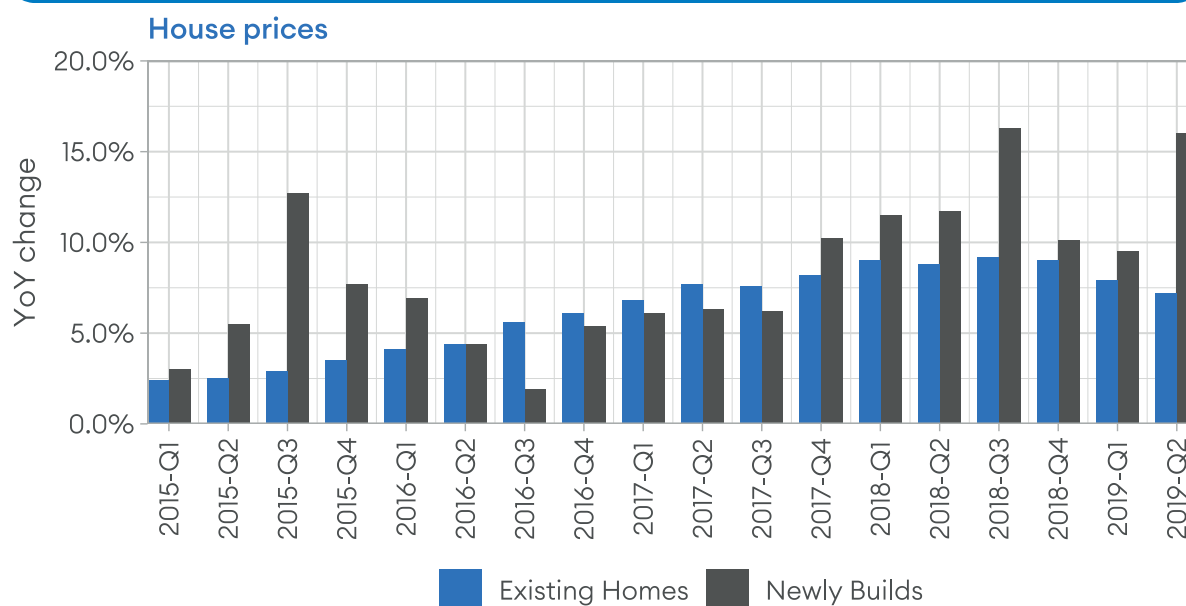
Figure 17: Nitrogen pollution on the ground in the Netherlands.

¹ [Dutch Financial Times - Gloomy construction sector](#)

New construction projects at risk due to nitrogen ruling - continued

The price increases of new builds have outpaced existing home price increases for seven consecutive quarters now. The price increases have been driven by stricter regulation to build new houses in a sustainable and energy efficient manner. But more is expected, irrespective of the 'Nitrogen Crisis', construction costs data company BDB expects costs to rise between 11.5% and 16.5% as of past summer. The steep increase is caused by a bunch of additional sustainability measures such as the prohibition of a natural gas connection (houses should be heated without fossil fuels).

- Prices of new builds are increasing much faster than prices for existing homes -



Source: Dynamic Credit, CBS

Figure 18: Price development of new builds and existing homes in the Netherlands

- Sharp increase in construction costs due to ruling -

In short, PFAS and PAS turmoil are expected to hurt supply of newly builds until a solution is found, while stricter building regulation is making more supply more costly. Both are likely to contribute to the outpace of price increases of newly builds, however it remains uncertain if consumers are willing to pay up. An old house has a charm of its own too, especially if it is cheaper.

Prinsjesdag 2019 - the Rutte cabinet announced plans for 2020

Tax increase for private landlords

In an attempt to deal with the scarcity of affordable housing, Minister of the Interior and Kingdom Relations, Kajsa Ollongren, sent a [letter](#) to the house of representatives, in which one of the goals was to improve the balance between starters and investors.

Under the current wealth tax regime, a consumer is taxed on its net assets: its assets minus any debt in box 3 (debt that is ineligible for interest rate deductibility) and minus a deductible. An effective tax rate between 0.58% to 1.68% applies depending on different levels of wealth. In the new proposed wealth tax system, to be effective per 2022, not the full debt can be deducted making it less attractive to invest with borrowed money. Furthermore, investments, other than savings, will be taxed at a less favorable rate¹.

There is no denying that this, all else equal, puts private landlords in a less attractive situation, especially in cases of high leverage, but the investment can still make sense if the landlord can ensure a high rental yield. The impact of the rules on the net IRR can be seen in the chart below. From an IRR perspective, a buy-to-let investment with a 90% mortgage is still attractive if the rental yield is high and/or the investor benefits from house price appreciation above the CPI.

- Private landlords can still get a high return, but should be more diligent in optimizing leverage subject to rental yield -

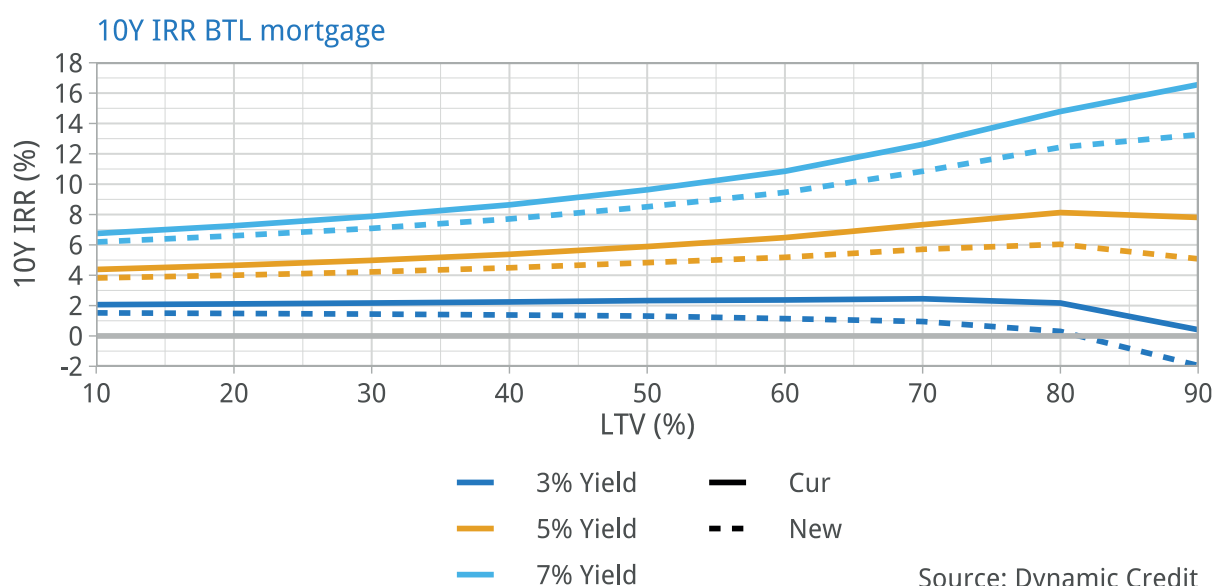
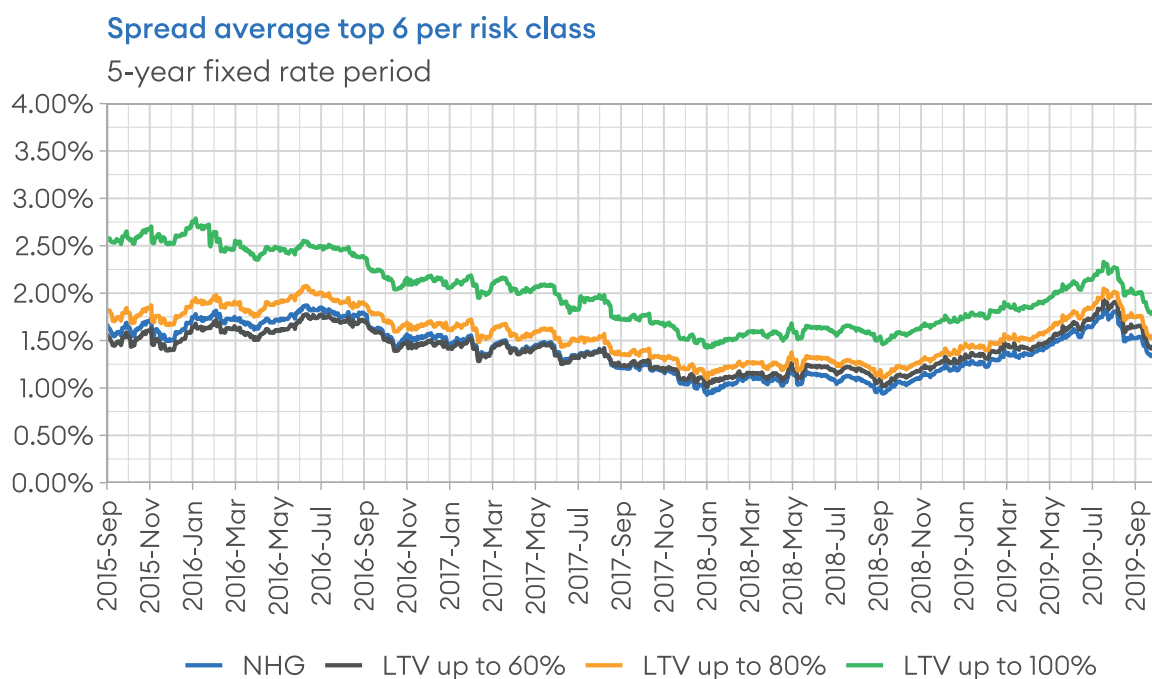


Figure 19: Investor IRR. The following assumptions have been used: 2% annual increase in house price, the investment is taxed under bracket 2, equal parts IO/Linear, 10-Year FRP rates of DC verhuurhypotheek, 4% transaction cost, 5% haircut on property in rented state, 0.75% annual cost indexed with 2% CPI.

Other measures are under investigation include an increase stamp duty for private landlords to 6% and abolishing stamp duty for first-time buyers. Stamp duty for subsequent buyers (for own use) is to remain at 2%. Also under investigation, a specific LTV cap for BTL loans and the impact of additional taxation of rental income. More clarity on these measures is expected towards the end of the year.

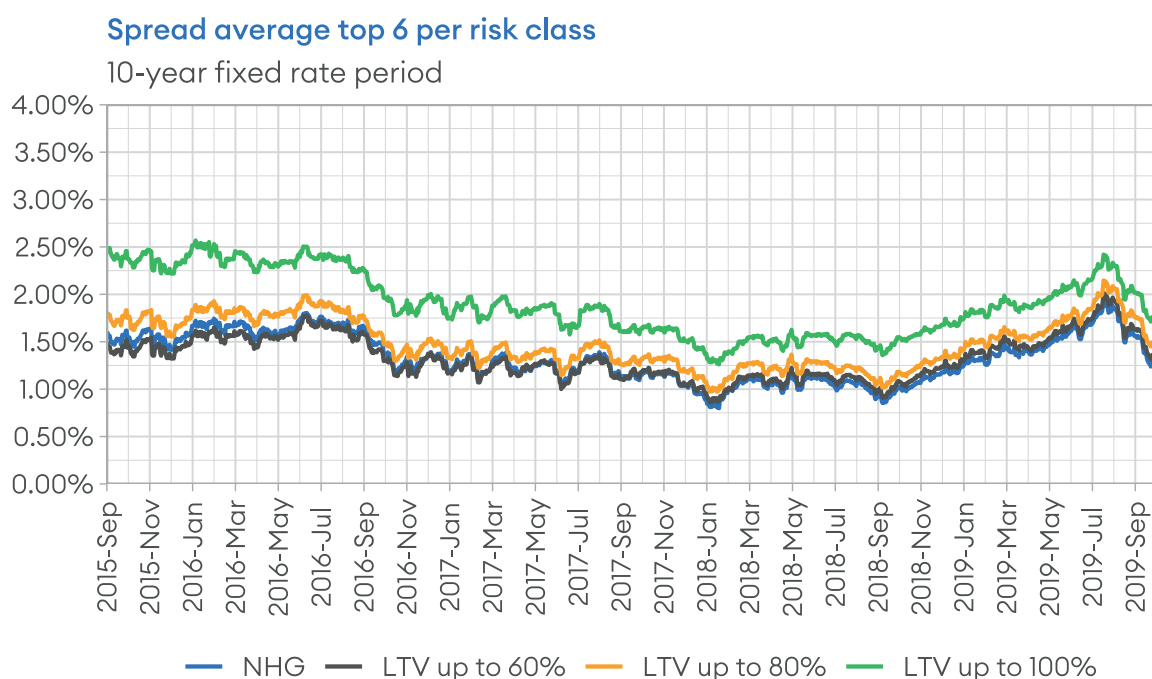
¹ Tax = 33% x (savings x 0.09% + other assets x 5.33% - debt x 3.03% - EUR 400) (if savings + other assets exceed EUR 30.846, otherwise Tax = 0%)

Appendix



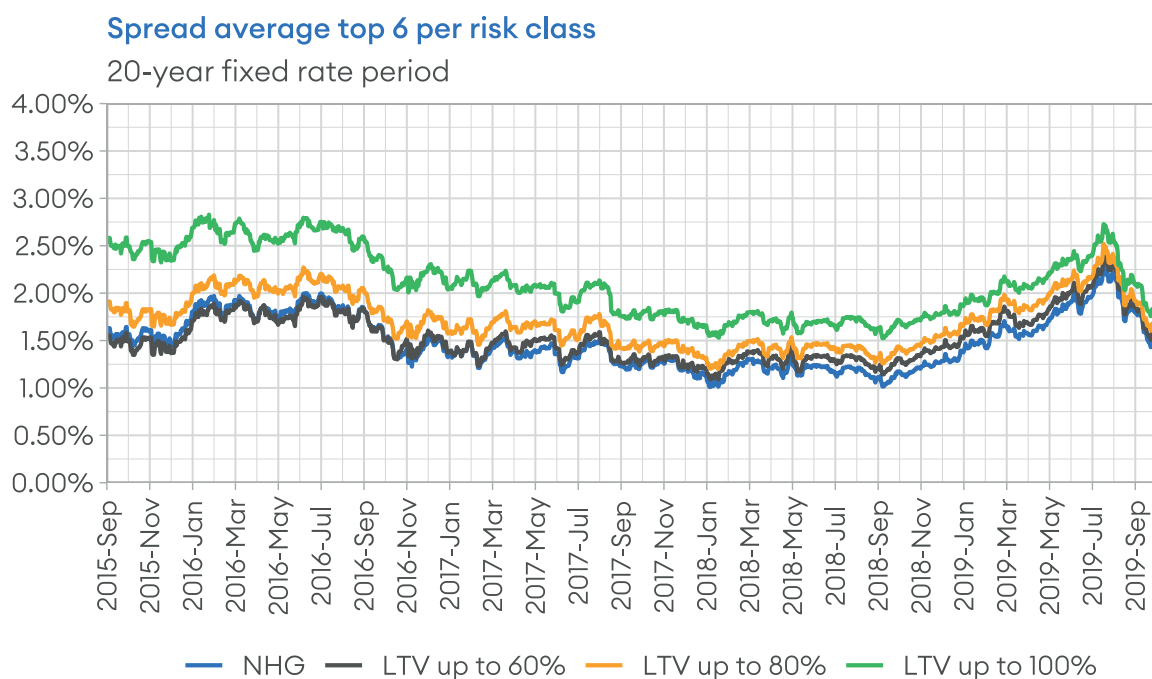
Source: Dynamic Credit, Hypotheekbond

Figure A1: Spread of the average top-6 price leader mortgage rates (excluding action rates) for mortgage loans with a 5-year fixed rate period for four risk classes.



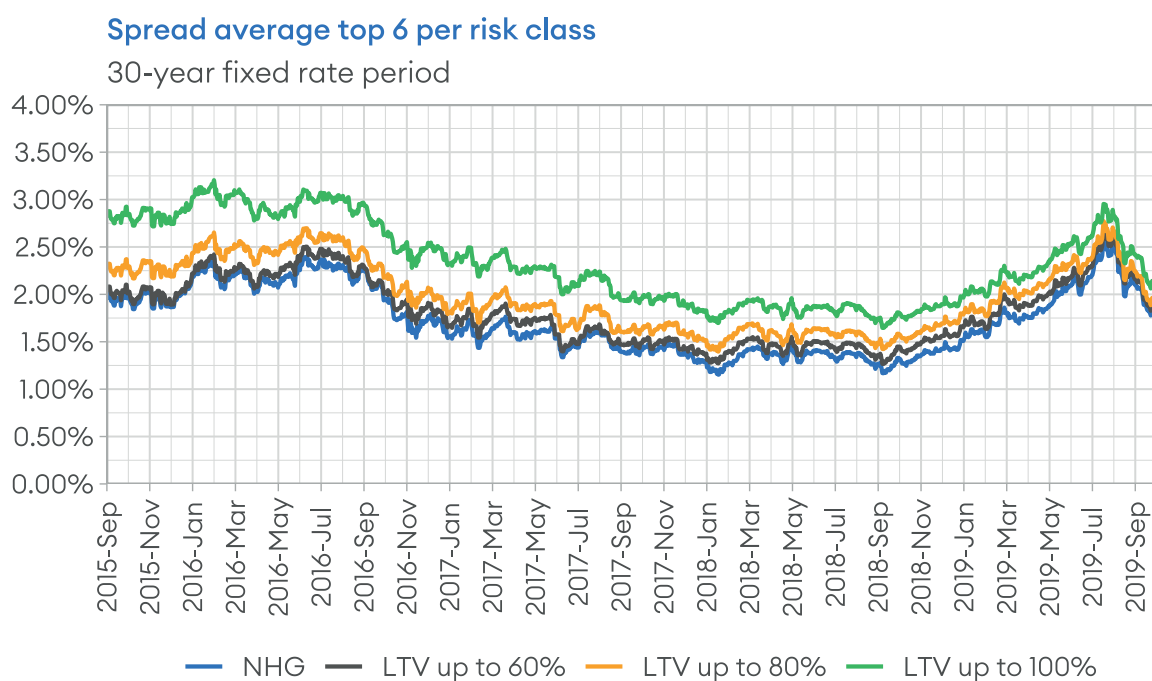
Source: Dynamic Credit, Hypotheekbond

Figure A2: Spread of the average top-6 price leader mortgage rates (excluding action rates) for mortgage loans with a 10-year fixed rate period for four risk classes.



Source: Dynamic Credit, Hypotheekbond

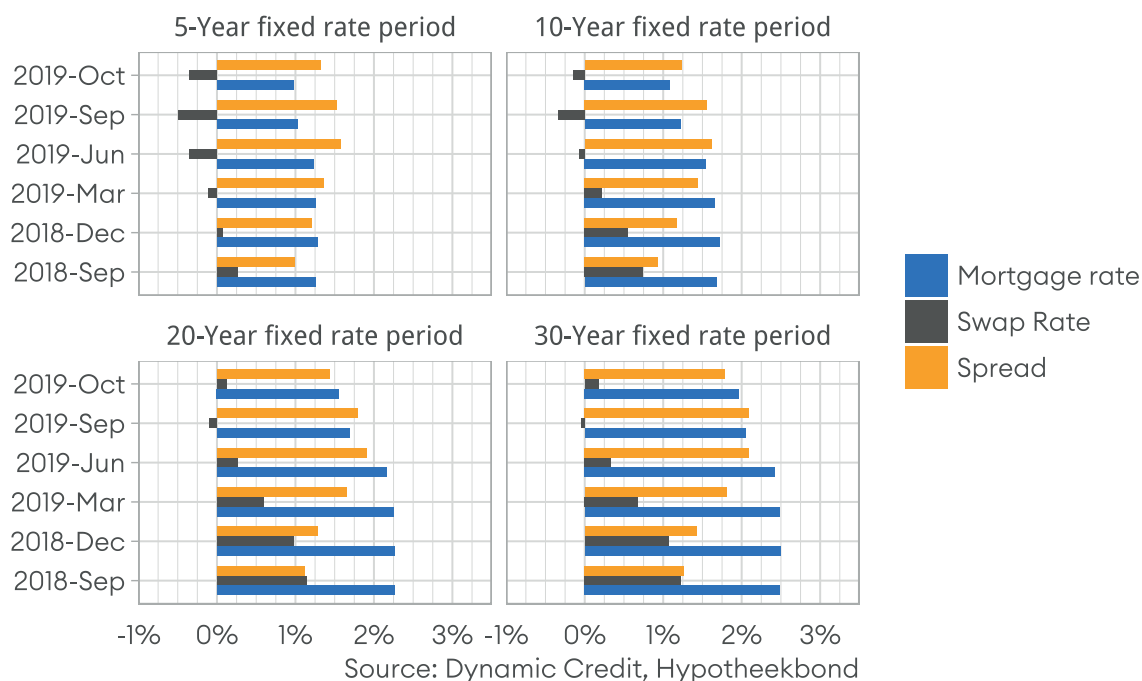
Figure A3: Spread of the average top-6 price leader mortgage rates (excluding action rates) for mortgage loans with a 20-year fixed rate period for four risk classes.



Source: Dynamic Credit, Hypotheekbond

Figure A4: Spread of the average top-6 price leader mortgage rates (excluding action rates) for mortgage loans with a 30-year fixed rate period for four risk classes.

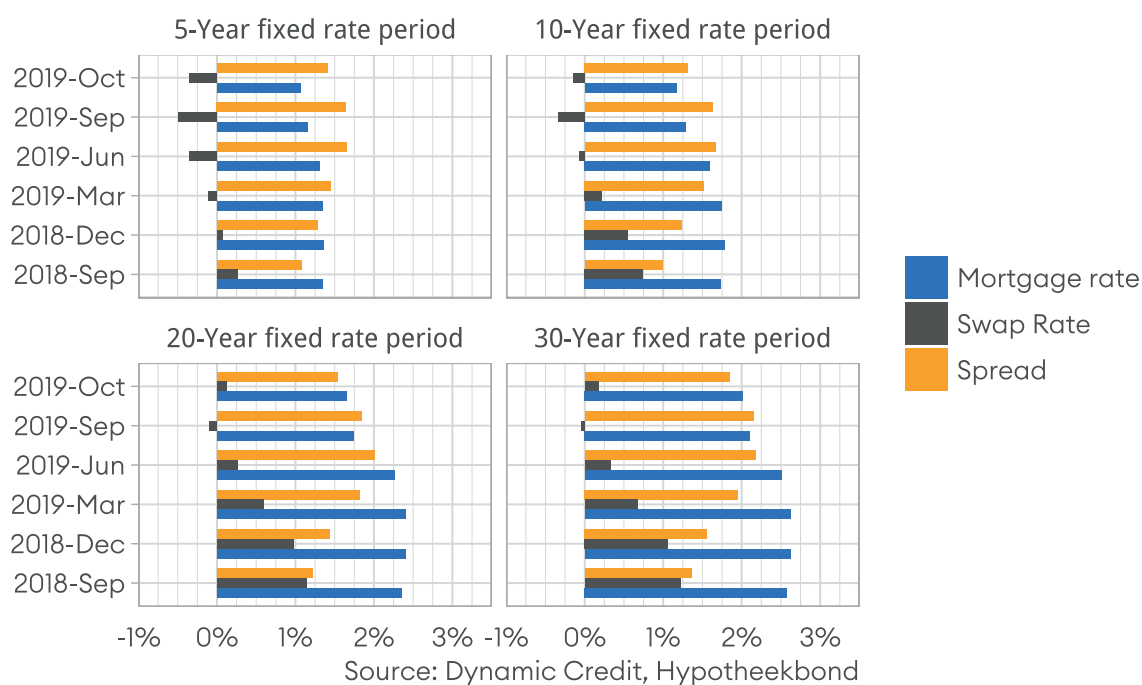
Mortgage rate decomposition for NHG mortgage loans



Source: Dynamic Credit, Hypotheekbond

Figure A5: Mortgage rate decomposition of the average top-6 price leaders (excluding action rates) for NHG mortgage loans with different fixed rate periods. End of month data has been used.

Mortgage rate decomposition for 60% LTV mortgage loans



Source: Dynamic Credit, Hypotheekbond

Figure A6: Mortgage rate decomposition of the average top-6 price leaders (excluding action rates) for 60% LTV mortgage loans with different fixed rate periods. End of month data has been used.

Mortgage rate decomposition for 80% LTV mortgage loans

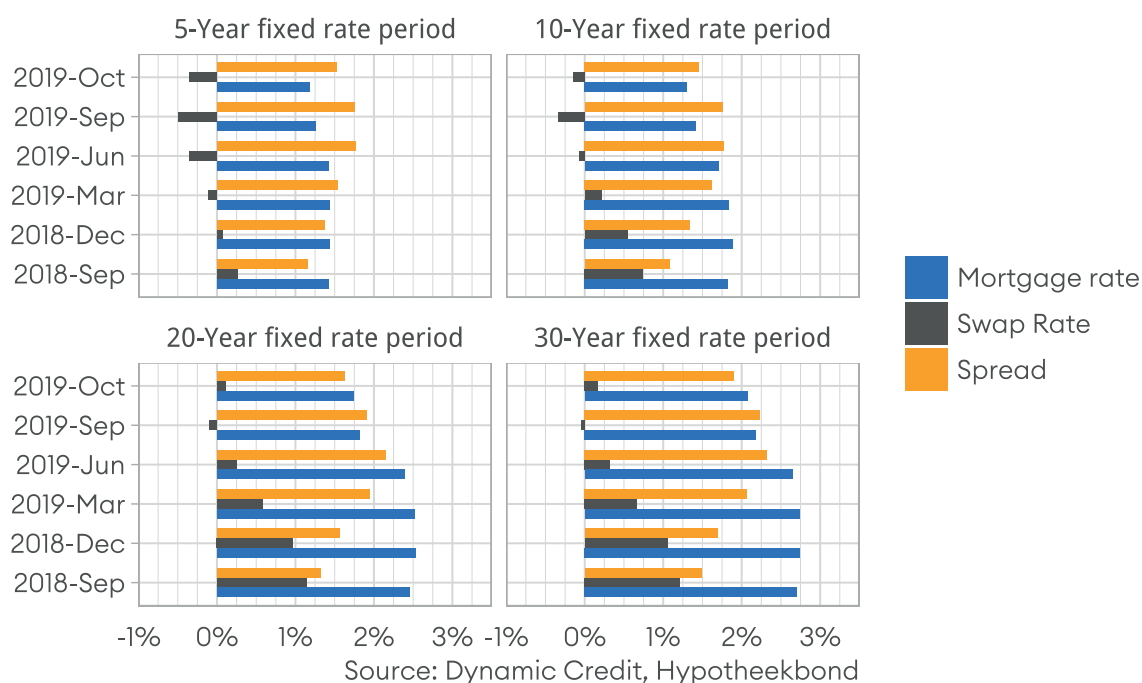


Figure A7: Mortgage rate decomposition of the average top-6 price leaders (excluding action rates) for 80% LTV mortgage loans with different fixed rate periods. End of month data has been used.

Mortgage rate decomposition for 100% LTV mortgage loans

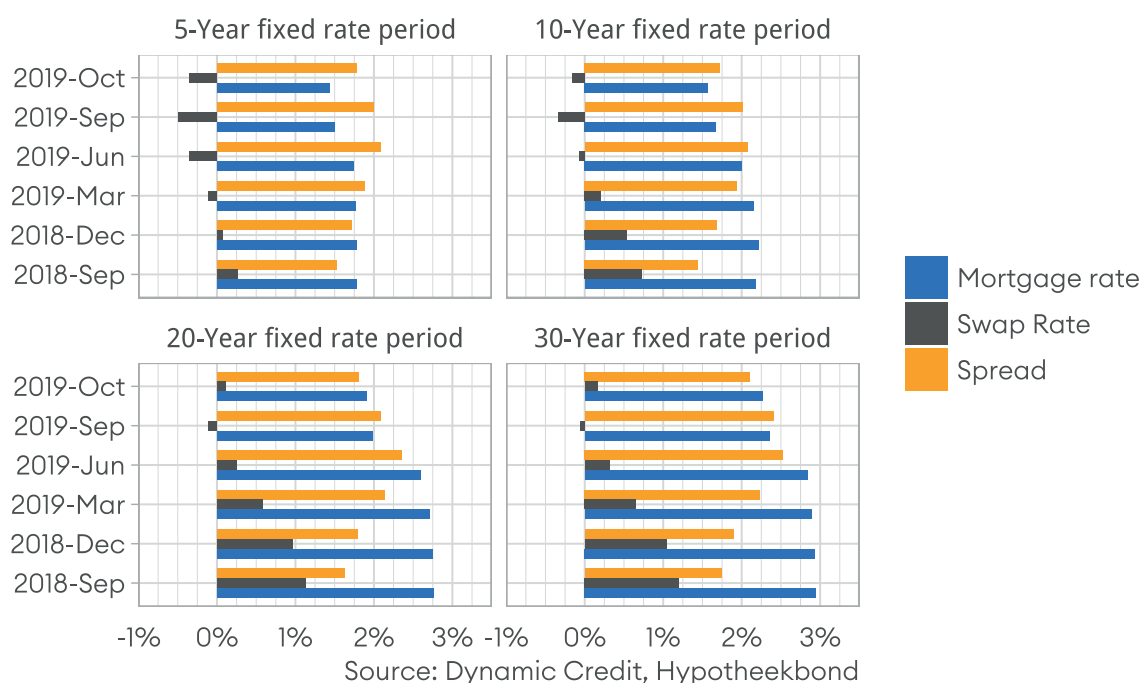


Figure A8: Mortgage rate decomposition of the average top-6 price leaders (excluding action rates) for 100% LTV mortgage loans with different fixed rate periods. End of month data has been used.

Revealing Opportunities.

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