

House price increase in Amsterdam flattens again, rest of the country follows

Dutch Housing Market Quarterly Carola de Groot and Lisanne Spiegelaar

- In the second quarter, houses were 7.2 percent more expensive than they were a year ago. As expected, the rate of increase is slowing
- Whereas house prices rose 9 percent on average in 2018, we are forecasting an average rise of 6 percent in 2019 and 4 percent in 2020.
- The difference in the average sale price between the most expensive province in the Netherlands, Noord-Holland, and the cheapest, Groningen, has risen to 175,000 euros.
- You will pay around 1.5 times more for a home in Amsterdam, the capital, than for a home in another location in the Netherlands. This is a big difference, but in the UK or Denmark house prices in the capital are more than twice the prices in other parts of these countries.
- The number of sales declined, but only to a limited extent. We expect sales to stabilize, with 205,000 transactions in both 2019 and 2020.

# Price increase is lower, sales are stabilizing



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# Rise in house prices slows again

Home buyers paid an average of 303,000 euros for a home in the second quarter of 2019. This is nearly 18,000 euros more than a year ago. An owner-occupied home now costs nearly 92,000 euros more than it did at the low point of the housing market in the second quarter of 2013. People buying a home in Amsterdam once again spent the most, paying an average of more than 472,000 euros, while homes in Rotterdam were selling for around 284,000 euros (figure 1). In Zuid-Holland, the average sale price topped 300,000 euros for the first time, with home buyers paying an average of 301,000 euros in the second quarter. In Groningen – historically the province in which house prices are the lowest – home buyers paid an average of 213,000 euros. Home buyers in Noord-Holland had to pay around 174,000 euros more than this. The average sale price here was of course driven higher by the huge prices (by Dutch standards) in the capital.

The difference between the most expensive province (currently Noord-Holland, but until 2014 this was almost always Utrecht) and the cheapest province has been rising rapidly since the third quarter of 2015. Since 2000, the difference between the most expensive and the cheapest province has, apart from the odd exception, fluctuated between 80,000 and 110,000 euros (figure 2). The increasing regional variations in average sale prices is because in recent years, the prices of already expensive properties in Noord-Holland have risen faster than houses in the less intense market in Groningen (figure 3). Living in Noord-Holland has thus become less affordable in the last couple of years, as incomes – as a measure for maximum mortgages – have not risen by the same amount. In our previous Housing Market Quarterly we already noted that prospective first-time buyers in Noord-Holland had an average shortfall of 164,000 euros for an average house, based on the average sale price. In Groningen, this amount was much lower at 64,000 euros.

#### Figure 1: Home buyers in South-Holland now pay 300k on average



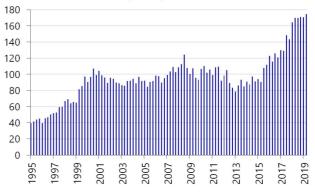
Source: Statistics Netherlands, Dutch Land Registry

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In the second quarter of 2019, existing owneroccupied properties were 7.2 percent more expensive than they were a year ago, as shown by the price index for existing owner-occupied homes from Statistics Netherlands and the Dutch Land Registry, adjusted for the changing composition of the homes sold.[1] As in the previous quarter, the fastest rise in house prices was in Flevoland, where homes are now 9.2 percent more expensive (figure 3). The province of Groningen on the other hand posted a relatively modest price increase of 5.7 percent.

# Figure 2: Difference between most expensive and cheapest provinces much wider

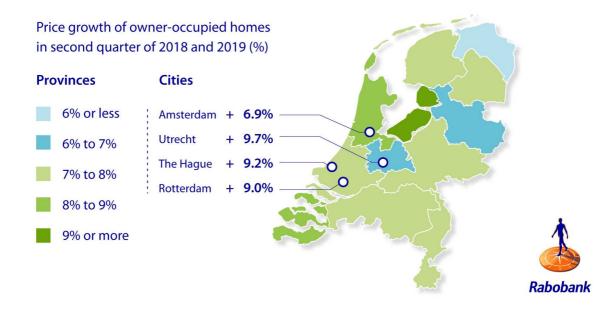
Price difference least and most expensive province (x  $\in$  1,000)



Source: Statistics Netherlands, Dutch Land Registry

Although prices are still rising rapidly, the rate at which they are rising has again slowed. In the first quarter of 2019, owner-occupied homes were actually 7.9 percent more expensive than a year previously. Compared to the previous quarter, house prices were up 1.1 percent, the lowest quarter-on-quarter increase since the last quarter of 2016.

#### Figure 3: Modest house price increase in Groningen again



Source: Statistics Netherlands, Dutch Land Registry

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# Average price of a new-build home approaches 400,000 euros

The fact that construction of new-build homes is lagging demand is no longer news. The number of building permits issued declined again in May, meaning that the 12-month total is still well short of the <u>95,000 to 115,000 homes</u> needed to address the current housing shortage and provide homes for new households (figure 4). According to the <u>Rabobank Construction Update</u>, around 66,000 new houses will be delivered in 2019, just like in 2018.

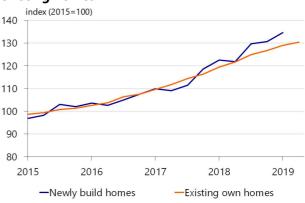
# Figure 4: Number of building permits cause for concern



To encourage new-build production, the government has recently concluded housing deals with 5 urban regions facing acute housing shortages, including the Metropolitan Region of Amsterdam and the region of Utrecht. New-build construction could possibly be accelerated by more flexible planning policy based on the recently amended Crisis and Recovery Act. It is not yet clear whether these housing deals will provide a solution. The extent to which they could be derailed by the <u>nitrogen ruling by the European Court of Justice</u> and the Council of State is also not clear. This ruling could make it more difficult to build homes around 118 protected natural areas affected by nitrogen overload. These areas are also located in regions where the housing market is extremely tight, such as the Randstad. As a result of the ruling, various construction projects have already been delayed or even halted. These nature areas can also be found in areas where the housing market is very tense, such as in the western part of the Netherlands. Due to the ruling, various construction projects have already been <u>delayed or even stopped</u>. It is possible that larger projects will ultimately go ahead if they pass the ADC test, which takes account of the public interest, among other things. For now, we expect to see delays in the implementation of various construction projects and a lower growth forecast for construction in 2020. The ruling means that the housing shortage could become more acute more quickly than feared and lead to further upward pressure on house prices, although this effect could be offset because at some point we will reach the point at which homes are no longer affordable for potential buyers.

It is not only that not enough homes are being built: those that are being built are relatively expensive. The average price for a new-build home is now approaching <u>400,000 euros</u>. This is partly because project developers have recently concentrated on building expensive homes to <u>compensate on the</u> <u>increased construction costs</u>. The prices of newbuild homes have risen faster than those of existing properties (figure 5). This could be due to higher construction costs, higher costs of land, shortages of personnel and sustainability requirements.

# Figure 5: New-build more expensive than existing homes



Source: Statistics Netherlands, Dutch Land Registry

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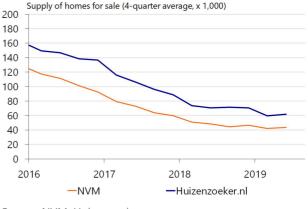
Less and less people seem to be willing or able to buy these expensive new-build homes. Sales of new-build homes are sluggish, with 13 percent fewer new-build sales by NVM real estate agents in the second quarter of 2019 compared to a year previously. As a result, the number of new-build homes for sale has risen by 12 percent year-on-year. This is remarkable, given the degree of the housing shortage. The prices of new-build properties apparently are not affordable for potential home buyers.

### Decline in home sales slows

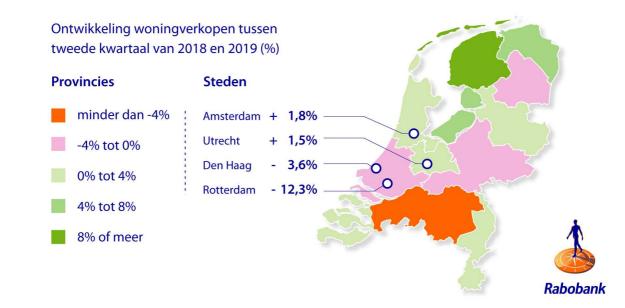
While there was a clear decline in new-build sales in the second quarter of 2019, the decline in the sales of existing owner-occupied homes of 0.8 percent year-on-year was relatively minor. Around 52,500 homes changed owner from May to the end of July 2019. The trend of a decline in the number of homes offered for sale that we have seen in recent years thus appears to have come to a halt, at least for now (figure 6).

Although there seems to be a bit more breathing space in the housing market, times to complete sales are still very short. In the second quarter, forsale signs for homes were posted for only 38 days, 5 days less than a year previously and 44 days less than in the second quarter of 2008. There are also large regional variations (figure 7). Home sales increased in 8 of the 12 provinces, with Friesland leading the way, where sales were up 11 percent year-on-year. Home sales in North-Brabant on the other hand declined by 6 percent compared to the same period a year previously.

#### Figure 6: Decline in supply seems to have ended



Source: NVM, Huizenzoeker



#### Figure 7: Much lower sales in Rotterdam, increase in Amsterdam

Source: Statistics Netherlands, Dutch Land Registry

There are also large variations in home sales in the four major cities. A decline of 20 percent in sales in the first quarter was followed by a further decline of 12.3 percent year-on-year in Rotterdam in the second quarter of

2019. On the other hand, sales in Amsterdam rose for the first time in 11 quarters. In Utrecht as well, there were more home sales in the second quarter of 2019 compared to the same period in 2018, the first such increase in two years.

# In the spotlight: The price of living in the capital

Those wishing to buy a house in the capital have to pay the top price. We are also seeing that Dutch house prices are rising more slowly than previously. How does this compare to other western European countries? According to the IMF, the development of housing markets in the large cities where many people want to live is not separate, it is closely interconnected.



### Amsterdam does not reflect London yet

### Homes in capital cities are much more expensive

Homes are much more expensive in capital cities than the rest of the country in our neighboring western European countries as well as in the Netherlands (figure 8).[2] In Denmark and the United Kingdom, you have to pay twice as much for a home in the capital than a home somewhere else in the country, based on the national average sale price. This difference is much lower in the Netherlands, where the average sale price in Amsterdam is approximately 1.5 times the national average.

# Figure 8: Homes in the capital twice as expensive in some cases



Note: Germany and Berlin are not included in the overview, as the average house prices for Berlin are not publicly available.

Source: National statistics agencies, processed by RaboResearch

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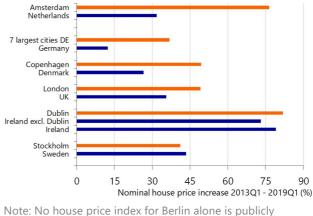
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According to the leading American urban studies theorist Richard Florida, high house prices in cities are due to geographical restrictions, such as a seaside location. Demand for housing in cities is high due among other things to better employment opportunities and the availability of facilities such as higher education, museums, shops and restaurants. However, there is not enough space for all these people. Supply (and housing construction) is not enough to meet demand due to planning restrictions (due to geographical features in some cases) and the requirements set for parameters such as the maximum height of buildings and the maximum housing density. The shortage of urban housing leads to high house prices in capital cities.

### Strongest house price increases in cities

With the exception of Stockholm and Dublin, already expensive homes in many western European cities have risen much faster than the national averages in recent years (figure 9, see also Claevs et al. 2017). In Amsterdam, the difference in increase compared to the country as a whole has risen to 44.6 percentage points since the beginning of 2013. The strong house price increases in capital cities are once again linked to relatively inelastic supply as a result of supply restrictions. In Amsterdam as well, a large part of the land is fully developed. This means that increasing demand for homes in the city leads mainly to higher house prices rather than increased housing supply. The American researcher Gyourko and his colleagues call these cities where house prices rise much faster than the housing supply 'Superstar Cities'. While homes in Stockholm and Dublin are significantly more expensive than homes





available. The figures for the capital of Germany are therefore based on the seven largest German cities.

Source: National statistics agencies, processed by RaboResearch

elsewhere in their respective countries, house prices in these capital cities are moving much more in step with the development of national house prices. It could be that supply is more elastic in these cities: it is known that Sweden and Ireland to a somewhat lesser extent have more <u>elasticity of supply</u> than the UK, Germany and the Netherlands, for example.

### Elasticity from the growth of house prices in capital cities

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https://economics.rabobank.com/publications/2019/august/house%2Dprice%2Dincrease%2Damsterdam%2Dflattens%2Drest%2Dcountry%2Dfollows/with the second second

House prices in Amsterdam are now rising less rapidly than they were (figure 10). The pace of increase is also slowing in Copenhagen[3], Dublin and the seven largest cities in Germany[4]. House prices have actually been falling in Stockholm and London for several quarters. The decline in Stockholm is faster than in the rest of Sweden, confirming the view that house prices in capital cities are significantly <u>more volatile</u>.

# Figure 10: Flatter growth of house prices in capital cities



There could be several reasons why house prices in the capital cities are rising less rapidly, and even falling in some cases. One possible reason is declining demand for homes in the capitals. Potential house buyers could simply consider houses in the capital to be too expensive and prefer to move out to the surrounding areas where homes are more affordable. Another explanation could be the <u>policy measures</u> introduced in recent years in some countries aimed at halting the rapid increase in prices and mitigating financial risks in the housing market. For instance, <u>stricter repayment obligations</u> apply in Sweden, and in the UK, there has been an increase in the transfer tax due on second homes, as a result of which buy-to-let demand has waned. Additionally, concerns about the looming Brexit may be causing downward pressure on housing prices in London.

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	2014		2015	2016	2017	2018		
	Q1 Q2 Q3 Q4	Q1 (	Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4		
Netherlands					•	0		
Germany					÷1	0		
Denmark			0					
Ireland			0					
UK		0						
Sweden				0				
				<ul> <li>peak in 4QMA y-o-y price increase capital city</li> </ul>				
				<ul> <li>peak in 4QMA y-o-y price increase national</li> </ul>				

#### Table 1: House price growth peaks in the capital first

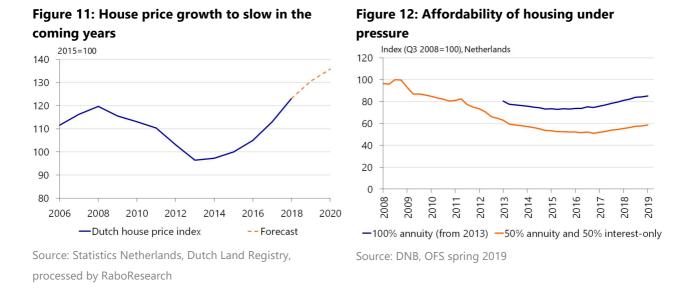
Note: No house price index for Berlin alone is publicly available. The figures for the capital of Germany are therefore based on the seven largest German cities.

Source: National statistics agencies, processed by RaboResearch.

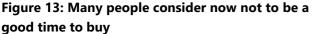
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### 2019: lower sales and slower house price growth

We expect house prices to rise by 6 percent on average in 2019 (figure 11). This rate of growth is 3 percentage points lower than the average house price growth in 2018. In 2020, we expect a further slowing in the rate of increase towards 4 percent. Our forecast fits with the slower rate of increase in house prices that we are seeing not only in the capital, but also in the rest of the country.



The slower rate of increase is partly due to the fact that we have apparently reached the limit of what is affordable. <u>Financing costs</u> have risen sharply in recent years: the cost of financing a full annuity loan in the four major cities is now actually higher than it was just before the crisis (figure 12). If homes become less affordable, demand for housing will diminish and the upward pressure on house prices will be reduced. Another reason why house prices are not rising so fast is the more negative sentiment in the housing market. Although <u>consumer confidence</u> and propensity to buy has picked up slightly in recent months, many people still consider now not to be a good time to buy a house (figure 13). People may be less inclined to bid higher than the asking price, which will reduce the pressure on prices.





# Figure 14: Mortgage interest is low and will continue to be low



But the flattening of house price growth will be offset by the continuing lack of supply in the housing market and the extraordinary low level of interest rates (figure 14). This situation is unlikely to change any time soon, given the developments in the number of building permits, the nitrogen ruling and the announcements

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relating to a possible further reduction in interest rates. But, possibly more importantly, the economy is still growing and the unemployment is still extremely low. Nominal wage growth is also positive. Income (together with interest rates) is a determining factor in the development of house prices. Higher income (accompanied by stable financing rates) can stimulate demand for housing, since households will spend some of this extra income on housing. If supply remains constant, this can exert upward pressure on house prices. In addition, with effect from 2020 up to 80 percent of a second income may be counted when establishing a maximum mortgage according to the plans of the Ministry of Finance. If maximum mortgage to income ratios (the percentage of your income you can afford to spend on housing) remain stable, this means that potential house buyers can borrow more, thus further increasing upward pressure on prices.

There are however uncertainties in the economic outlook. The likelihood of a hard Brexit – which would be harmful for the Dutch economy – has increased now that Boris Johnson is the new British prime minister. A hard Brexit or a further escalation of the trade conflict between China and the United States would also affect the Dutch housing market due to lower economic growth. The average increase in house prices of 4 percent that we are currently forecasting in 2020 would probably be lower in this case.

Since homeowners have been increasingly less inclined to put their homes up for sale in recent years - and therefore the number of home sales has reduced - we have previously expressed our forecast that around 205,000 homes will change hands in 2019. This is around 6 percent lower than in 2018, when 218,000 homes changed hands (figure 15). The post-crisis catch-up effect in the demand for housing is over by now. Almost 100,000 homes were sold in the first half of 2019, so we are at approximately half our forecast for the year.

We are adjusting our forecast for the number of transactions in 2020 to the upside. The developments in the housing supply and the number of sales suggest that a new balance in the number of transactions has been reached. In 2020, we expect to see 205,000 transactions rather than the 195,000 we originally forecast. The number of sales compared to the total owner-occupied housing stock will thus stabilize at a lower level in the coming years in comparison to the years before the crisis (figure 16). This may be related to the aging of the population, which of course affects home owners as well. Older people are much less inclined to move house than young adults, and this forms a block on the housing market.

All in all, there is still a cooling breeze in the overheated housing market. We expect house prices to continue to rise in the second half of 2019 and in 2020 due to the state of the Dutch economy and continuing low interest rates, but at a slower pace than seen in the last couple of years as a result of the more negative mood in the housing market and the fact that homes have become less affordable. The number of transactions also appears to be stabilizing.



Figure 15: Number of sales seems to be

Source: Statistics Netherlands, Dutch Land Registry, processed by RaboResearch

#### Figure 16: The new normal is lower



Note: the forecasts for 2019 and 2020 are calculated using an estimate of the total number of transactions (see figure 15) and an estimate of the total owner-occupied housing stock. We have assumed that this stock will increase in 2019 and 2020 by approximately 43,584 homes year-on-year, as was the case in 2018.

Source: Syswov ABF Research, CBS, Dutch Land Registry, processed by RaboResearch

### Key figures

	2017	2018	2019p	2020p
GDP (growth, %)	2.9	2.7	1.7	1.6
Inflation (%)	1.3	1.6	2.7	1.7
Unemployment (% of labour force)	4.8	3.8	3.4	3.6
<sup>a</sup> Rabobank forecasts				
House prices				
Quarter-on-quarter (%)	2018Q3	2018Q4	2019Q1	2019Q2
Mean sales price (Land Registry)	2.6	0.4	2.8	0.4
Housing Price Index (Statistics Netherlands/Land Registry)	2.7	1.5	1.7	1.1
WOX (Calcasa)	2.9	1.0	2.2	34
Houses sold (Land Registry) Forced auctions (Land Registry)	56,921 0.2%	56,410 0.4%	47,431 0.4%	52,506 0.3%
Forced auctions (Land Registry)	0.2%	0.4%	0.4%	0.3%
Forced auctions (Land Registry) Building permits issued (twelve-month rolling total)	0.2% 2018Q3	2012 C 10 10 10 10 10 10 10 10 10 10 10 10 10	1	52,506 0.3% 2019Q2
Forced auctions (Land Registry) Building permits issued (twelve-month rolling total)	0.2%	0.4%	0.4%	0.3%
Forced auctions (Land Registry) Building permits issued (twelve-month rolling total) Houses (Statistics Netherlands)	0.2% <b>2018Q3</b> 66,529	0.4% 2018Q4	0.4% 2019Q1	0.3%
Forced auctions (Land Registry) Building permits issued (twelve-month rolling total) Houses (Statistics Netherlands) Mortgage interest rates on new loans (Dutch Central Bank	0.2% <b>2018Q3</b> 66,529	0.4% 2018Q4	0.4% 2019Q1	0.3% 2019Q2 -
Forced auctions (Land Registry) Building permits issued (twelve-month rolling total) Houses (Statistics Netherlands) Mortgage interest rates on new loans (Dutch Central Bank Quarter averages (%)	0.2% 2018Q3 66,529 k)	0.4% <b>2018Q4</b> 69,782	0.4% <b>2019Q1</b> 65,845	0.3% 2019Q2 -
Forced auctions (Land Registry) Building permits issued (twelve-month rolling total) Houses (Statistics Netherlands) Mortgage interest rates on new loans (Dutch Central Bank Quarter averages (%) Maturity <= 1 year	0.2% 2018Q3 66,529 k) 2018Q3	0.4% 2018Q4 69,782 2018Q4	0.4% 2019Q1 65,845 2019Q1	0.3% 2019Q2 - 2019Q2
Forced auctions (Land Registry)	0.2% 2018Q3 66,529 k) 2018Q3 1.89	0.4% 2018Q4 69,782 2018Q4 1.87	0.4% 2019Q1 65,845 2019Q1 1.89	0.3% 2019Q2 - 2019Q2 1.86

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### Footnotes

[1] This index gives a better indication of the price development of the whole housing stock than the average sale price, since the index is not affected by differences in the features and quality of the homes sold.

[2] This international comparison focuses on western European countries around the Netherlands. For reasons of availability of data, we selected Denmark, Germany, Ireland, the United Kingdom and Sweden. France was ultimately not included due to the lack of publicly available data on the development of house prices in Paris.

[3] The national statistics agency in Denmark reports a house price index per type of dwelling, but does not report a total price index. The figures in the text and figures relate to the development of prices for single family homes. Prices of flats have risen more rapidly, both nationally and in Copenhagen, but the difference between the national increase and the increase in the capital is less than for single family homes.

[4] No house price index for Berlin alone is publicly available.

### Sources

Aalders, R. & Lennartz, C. (2018). De impact van stedelingen op lokale woningmarkten. Utrecht: Rabobank.

Balcilar, M., Beyene, A., Gupta, R., & Seleteng, M. (2013). <u>'Ripple' Effects in South African House Prices</u>. Urban Studies, 50(5), 876–894.

Barendregt, E. & Spiegelaar, L. (2019) <u>Binnenlandse vraag stabiele factor voor Nederlandse economie</u>. Utrecht: Rabobank.

Caldera Sánchez, A. & Johansson, Å. (2011). <u>The Price Responsiveness of Housing Supply in OECD Countries</u>, OECD Economics Department Working Papers, No. 837. Paris: OECD Publishing.

Capital Value (2019). Woningtekort loopt op naar 263.000 woningen, newsletter February 11, 2019.

Statistics Netherlands (CBS) (2019). Consumer confidence improves, newsletter June 20, 2019.

Claeys, G., Efstathiou, K. & Schoenmaker, D. (2017). <u>Spotting excessive regional house price growth and what</u> to do about it, Bruegel Policy Contribution, no 26, October 2017.

Dalen, P. van & Vries, P. de (2015). Huizenprijzen vooral bepaald door inkomen en rente. Utrecht: Rabobank.

Davis, M.A. & Ortalo-Magné (2011) <u>Household expenditures, wages, rents</u>, Review of Economic Dynamics, 14, 248-261.

De Nederlandsche Bank N.V., (DNB) (2019a). <u>Overzicht Financiele Stabiliteit (OFS) voorjaar 2019</u>. Amsterdam: DNB.

DNB 2019b. Economic developments and prospects June 2019, number 17. Amsterdam: DNB.

Dumitru, A. (2019). Brexit update - Brexit 2.0. Utrecht: Rabobank.

Copyright © 2019 Rabobank/RaboResearch, Utrecht

Erken, H., Hayat, R., Heijmerikx, M., Prins, C. & Vreede, I. de (2017). <u>Assessing the economic impact of Brexit:</u> <u>Background report</u>. Utrecht: Rabobank.

Florida, R. (2016). Blame geography for high housing prices? Citylab article April 18, 2016.

Groot, C. de, Dam, F. van & Daalhuizen, F. (2013). Vergrijzing en woningmarkt. The Hague: PBL.

Groot, C. de & Vrieselaar, N. (2019). <u>Cooler breeze on Dutch housing market, but young adults fall some</u> <u>100,000 euros short for the average home</u>, Housing Market Quarterly, May 2019. Utrecht: Rabobank.

Gyourko, J., Mayer, C. & Sinai, T. (2013). <u>Superstar Cities</u>. American Economic Journal: Economic Policy, 5(4), 167-199.

Hekwolter of Hekhuis, M., Nijskens, R. & Heeringa, W. (DNB) (2017). <u>The housing market in major Dutch cities</u>. Amsterdam: De Nederlandsche Bank (the Dutch central bank).

Het Financieele Dagblad (2019). ECB gaat zich opmaken voor een renteverlaging in september, July 24, 2019.

Het Financieele Dagblad (2019). Stikstofuitspraak zadelt woningbouw met extra probleem op, July 20, 2019.

International Monetary Fund (IMF) (2018). <u>Global financial stability report April 2018: a bumpy road ahead</u>. Washington, DC: IMF.

Lennartz, C. (2018). <u>Huizenprijzen in mondiale steden beginnen te dalen – volgt nu ook Amsterdam?</u> Utrecht: Rabobank.

Liu, C., Ma, L., Luo, Z.Q. & Picken, D. (2009). <u>An interdependence analysis of Australian house prices using</u> <u>variance decomposition</u>, International journal of housing markets and analysis, vol. 2). 3, 218-232.

Lugaro, C. (2018) <u>The Nordic housing market: a slowdown but no collapse</u>, March 2, 2018 Stockholm: Alfred Berg.

MacDonald, R. & Taylor, M.P. (1993). <u>Regional House Prices in Britain: Long-Run Relationships and Short-Run</u> <u>Dynamics</u>, Scottish Journal of Political Economy, 40, 43-55.

Minister of the Interior and Kingdom Relations (BZK) (2019). <u>Woondeals</u>, information page obtained on July 30, 2019.

Nauta, L. (2019). Sectorprognoses: Nederlandse industrie lijkt top te hebben bereikt. Utrecht: Rabobank.

Dutch Real Estate Brokers Association (NVM) (2019). <u>Stapeling van regels maakt nieuwbouw onbetaalbaar</u>, newsletter July 11, 2019.

NVM (2019) Analyse woningmarkt, 2<sup>e</sup> kwartaal 2019. Nieuwegein, NVM:

Planbureau voor de Leefomgeving (PBL) (2015). <u>De stad: magneet, roltrap en spons. Bevolkingsontwikkelingen</u> in stad en stadsgewest. The Hague: PBL.

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Council of State (2019). PAS-uitspraken 29 mei 2019.

Saiz, A. (2010). <u>The geographic determinants of housing supply</u>, The Quarterly Journal of Economics, 125(3), 1253-1296

Shiller, R. (1990). Speculative Prices and Popular Models. The Journal of Economic Perspectives, 4(2), 55-65.

Spiegelaar, L. & N. Vrieselaar (2019). <u>House prices expected to keep rising this year, homeownership</u> <u>unattainable for more and more people</u>, Housing Market Quarterly, February 2019. Utrecht: Rabobank.

Teye, A. L., Knoppel, M., de Haan, J. and Elsinga, M.J. 2017. "<u>Amsterdam house price ripple effects in the</u> <u>Netherlands</u>". Journal of European Real Estate Research, Volume 10(3), 331-345

Waal, L. de, Velleman, J. & Koenraadt, S. 2019. <u>Bouwupdate juli 2019</u>. Rabobank Construction Update, July 2019. Utrecht: Rabobank.

Zohrabyan, T. & Leatham, D.J. & Bessler, D.A. (2008)."<u>Cointegration Analysis of Regional House Prices in U.S</u>," Proceedings: 2007 Agricultural and Rural Finance Markets in Transition. St Louis, Missouri: Regional Research Committee NC-1014.

# Colophon

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