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In a seller's market, setting precise asking prices backfires

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The pre-registration of all three studies, data, and materials are available on [open science framework](#).

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Abstract

Negotiations are often settled near the mid-point between a seller's asking price and buyer's counteroffer. Precise, rather than round asking prices are stronger anchors, resulting in agreements closer to the asking price. Because setting precise asking prices tends to favor sellers, real-estate agents frequently advise doing so. While the advice is beneficial in a buyer's market where supply exceeds demand, in a seller's market where demand exceeds supply, it can backfire. Three pre-registered studies demonstrate the *backfiring precision effect*. Study 1 reveals that a substantial amount of Dutch real-estate agents advise sellers to set precise asking prices, regardless of the market they operate in. Studies 2 and 3 show that in a seller's market, setting precise prices is suboptimal as it leads to lower counteroffers. The estimated negative impact of precise asking prices in a heated housing markets such as Amsterdam, is estimated at thousands of Euros per deal.

Keywords: Negotiation, Price Precision, Buyer's Market, Anchoring, Precision

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First offers serve as cognitive anchors in negotiations and substantially impact the negotiated agreement (Ritov, 1996; Moran & Ritov, 2002; Galinsky & Mussweiler, 2001). Compared with round offers such as \$150,000, precise offers such as \$149,800 increase the anchoring effect. This is because precise offers lead buyers to counter with precise numbers which tend to be closer to the asking price, resulting in final agreements closer to the starting point (Janiszewski and Uy, 2008; Loschelder, Stuppi, & Trötschel, 2013). In the real-estate market, where sellers set their asking price, the straightforward advice following from these findings is to set a precise rather than a round asking price. But is this always advisable? Should sellers set precise prices in all markets? Or is this strategy suboptimal in a seller's market, where goods are scarce and demand exceeds supply? Here, we propose that in a seller's market, setting a precise price backfires.

In recent years, real-estate markets in metropolitan areas around the globe have gradually become seller's markets. According to the latest World Urbanization Prospects Report by the United Nations Department of Economic and Social Affairs (UNDESA), virtually all countries around the world become increasingly urbanized (see UNDESA, World Urbanization Prospects Report, 2014). In many cities, the demand for housing spaces is rising faster than the available supply, leading to ever increasing housing prices. The fierce competition leads potential buyers to bid above the listed asking price. Reports by Zillow.com, a large real-estate website in the USA, indicate that over the last 4.5 years (December 2012 to May 2017) the real-estate available for sale in USA has dropped by 18.93% (from 1,637,622 to 1,327,514). As a result, the housing values have increased by 22.11% (from a median of \$155,000 to \$199,000), while the listed prices went up by 30.50% (from a median of \$180,000 to \$259,000).

The phenomenon is by no means unique to the United States. According to Dynamis, an umbrella organization of Dutch real-estate firms, the competition in the Dutch housing market has reached a historic peak (Dynamis, 2017). A recent report commissioned by the Central Bank of the Netherlands constitutes that the housing market in the Dutch major cities has become a seller's market (Hekwolter of Hekhuis, Nijskens, & Heeringa, 2017, p. 17). In many areas of the Netherlands, potential buyers vastly outnumber sellers. Real-estate agents in Amsterdam have begun referring to asking prices as “minimum-prices” (“vanaf-prijs”, see Nijland, 2017) – the prices from which *overbidding* begins.

Interestingly, precise asking prices are quite common in Amsterdam's seller's market. In September 2017, one of the largest online Dutch real-estate websites listed more than 2000 housing properties for sale in Amsterdam, with asking prices ranging from €68,000 to €24,700,000. More than 60% of the asking prices were precise to the thousands, 8% were precise to the hundreds, and 5% were even more precise, to the tens and ones. For example, one Amsterdam house was listed for €679,718, another for €145,018. The fact that precise asking prices are common in seller's markets such as Amsterdam begs the question: is this strategy profitable for sellers seeking to sell at the highest price possible?

We propose it is not. Because precise asking prices serve as stronger anchors than round asking prices we specifically predict that precise asking prices will lead to counteroffers that are closer to the asking price – independent of whether it is a buyer's or a seller's market. As a consequence, precise asking prices will be beneficial for sellers in a buyer's market, where buyers negotiate and make counteroffers that are *lower* than the asking price, and sellers aim to reach agreements *closest* as possible to their asking price. In contrast, in a seller's market, where buyers engage in a bidding war and make counteroffers that are *higher* than the asking price, and

sellers aim to reach agreements *furthest away* as possible from their asking price, precise asking prices will be suboptimal for sellers. This is especially when bidding is done in a first-price sealed-bid auction style. That is, potential buyers place their sealed bid before an announced deadline and all bids are opened simultaneously by the buyer. With rare exceptions, the potential buyer with the highest bid wins, paying the amount that was bidden. Thus, conditional on being accepted, a counteroffer in a seller's market is equal to the negotiated agreement. In a seller's market, where demand exceeds supply, setting precise rather than round prices should backfire.

Precision amplifies anchoring: precise asking prices in a seller's market

People's evaluations, judgments, and estimations are influenced by previous numbers they are exposed to, whether these numbers are relevant or not (Tversky and Kahneman, 1974; Mussweiler & Strack, 2000; Epley & Gilovich, 2001). In negotiations, initial offers serve as anchors for the counteroffers, which in turn impact the negotiated agreement (Galinsky & Mussweiler, 2001; Ritov, 1996). The dynamic is simple: the first mover, often the seller, makes the first offer, and the second mover, often the buyer, provides a counteroffer. Often, the parties end up close to the mid-point between the initial offer and the counteroffer (Bazerman et al., 2000; Bazerman & Neale, 1993; Thompson, 1990). Since adjustments of the counteroffer are usually insufficient, first movers are in an advantageous position to shape the course of the negotiation and its final outcome (Benton, Liebling, & Kelley, 1972; Chertkoff & Conley, 1967; Magee, Galinsky, & Gruenfeld, 2007; Moran & Ritov, 2002; Ritov, 1996; Schweinsberg, Ku, Wang, & Pillutla, 2012; Shalvi, Moran, & Ritov, 2010; Yukl, 1974). Indeed, data from Delaware, New Jersey, and Pennsylvania, shows that higher asking prices of real-estate transactions were associated with higher selling prices (Bucchianeri & Minson, 2013).

Precise first offers provide an even more distinct advantage. Precise numbers, compared to round ones, serve as stronger anchors in judgments and evaluations (Zhang & Schwarz, 2013). In a series of experiments, Janiszewski and Uy (2008) had participants estimate the retail cost of various items. Participants were presented with a round or precise upper bound cost, serving as an anchor. Participants' estimates were closer to the upper bound when it was precise, compared to when it was round, thus showing that people adjust away less from precise numbers. The idea is that precise numbers lead to adjustments on a finer grained scale than round numbers. For example, when presented with an anchor of \$149,800, people adjust away on a scale of hundreds of dollars and may counter with e.g., \$147,200. In contrast, when presented with an anchor of \$150,000, people adjust away on a scale of ten-thousands of dollars and may counter with e.g., \$110,000. As a result, the mid-point of the asking and counter offers is closer to the asking price when it is precise than round.

The superiority of precise over round first offers as anchors for negotiation agreements was recently replicated in both laboratory (e.g., Loschelder, Stuppi, & Trötschel, 2013; Mason, Lee, Wiley, & Ames, 2013) and the field (Loschelder et al., 2013; Thomas, Simon, Kadiyali, 2010). For example, house owners were willing to pay more for a house when sellers set precise, compared to round prices (Loschelder et al., 2013), and the more precise the listed asking price was, the higher the final selling price was (Thomas, Simon, Kadiyali, 2010). A recent meta-analysis surveying 70 effect sizes and over 39,000 observations corroborates the robustness of the precision effect (Loschelder, Weber, Galinsky, Frech, Mason, & Friese, 2017). Overall, the advice deducted from this line of work is consistently clear: sellers should set precise asking prices to improve their negotiation outcome (see e.g., Dizik, 2014). However, as noted, we propose that in a seller's market, following this advice will be suboptimal.

In a seller's market demand exceeds supply, subsequently driving prices up (Dasso & Ring, 1989). In such markets, sellers have the upper hand and buyers compete with one another for a scarce resource. To successfully compete, buyers have to make counteroffer *above* the asking price in the hopes of closing a deal, and the negotiation turns into a bidding war where the highest bidder wins. Sellers in a seller's market wish to receive counteroffers that are as far away as possible above the asking price. That is, in a seller's market the *more* a potential buyer adjusts away from the asking price, the better the outcome is from the seller's perspective. If precise prices lead to an adjustment on a more fine-grained scale, setting precise asking prices will be counterproductive in a seller's market, as it will lead to counteroffers that are closer to the asking price, resulting in a suboptimal outcome for the seller.

Overview of Current Studies

Study 1 assesses the extent to which Dutch real-estate agents advise their clients to set precise vs. round asking prices. We surveyed real-estate agents working in the Netherlands in six different provinces to examine the prevalence of real-estate agents' advice to set precise asking prices, and whether their advice varies as a function of whether the agents work in a predominantly seller's vs. buyer's market. We test three pre-registered predictions: (H1) a significant proportion of real-estate agents advises sellers to set precise asking prices; (H2) the type of market agents work in (seller's vs. buyer's market) does not affect this advice; (H3) a significant proportion of agents are familiar with the results obtained by Janiszewski & Uy (2008) – the original study showing the precision effect. In Study 2, we experimentally tested the effect of precise vs. round asking prices on counteroffers in seller's and buyer's markets. Participants read a scenario in which they imagined being interested in buying an apartment. We varied the type of market to be a seller's vs. buyer's market and the asking price to be round (to the ten-thousands, e.g., \$150,000) vs.

precise (to the hundreds, e.g., \$149,800). We assessed the counteroffers participants provided, testing three pre-registered predictions: (H4) in a buyer's market, round asking prices lead to *lower* counteroffers than precise asking prices; (H5) in a seller's market, round asking prices lead to *higher* counteroffers than precise asking prices; (H6) the effect of precise (vs. round) asking price is robust to a variety of demographic factors. Finally, Study 3 aimed to replicate the results obtained in Study 2 and test whether the price-precision effect in seller's market emerges also with asking prices which are precise to the thousands (e.g. \$149,000). Pre-registration of all three studies, data, and materials are available on Open Science Framework (OSF). For brevity, robustness checks for both Studies 2 and 3, are reported at the end of Study 3.

Study 1

Method

Procedure. Following a pre-registered plan, in order to obtain a sufficient number of responses from real-estate agents working in the Netherlands, we emailed all real-estate agents from selected provinces listed on <http://www.makelaarssite.nl/>, a popular website. Specifically, we emailed all agents in North Holland, South Holland, Utrecht, Drenthe, Groningen, and Noord Brabant, in two waves of data collection (see OSF). Of those emails, 682 reached valid email addresses, and we obtained responses from 78 agents (11.43% response rate). All real-estate agents received an email asking them to fill out a short survey. To motivate participation, agents could enter a lottery in which one responder was randomly selected to receive €100 at the end of data collection.

Materials. Agents were asked to answer the following questions (Q1) “In which region or city do you conduct most of your business?”; (Q2) we explained that sellers can set round (e.g., €250,000) or non-round (e.g., €249,000) asking prices, and asked “If a client in the region

you work in wants to sell property do you usually advice to set a round or precise asking price?”, agents could choose between: (a) round price (b) precise price”; (Q3) “I would describe the housing market in the city or region I mainly work in as a: (a) buyer’s market, (b) seller’s market; (Q4) after reading a short description of Janiszewski & Uy’s (2008) findings, agents were asked “Did you hear about this study or its findings before reading about it today?” If they answered “yes”, they indicated “to what extent do you use the finding from the study?” (from 1 = I never use this information, to 7 = I always use this information); (Q5) “Do you mostly work with buyers, sellers, or work equally with sellers and buyers?”; (Q6) “Do you work as real-estate agent full-time, part time, or not at all?”; and (Q7) “How many years have you been working as a real-estate agent?” Lastly, agents indicated their age and gender.

Results

Out of the 78 replies (65.4% male, 26.9% female, 6.6% did not report gender; $M_{\text{age}} = 47.38$, $SD_{\text{age}} = 12.91$), 72 agents (92.31%) answered all questions. The six incomplete responses contained answers to our two main questions of interest (Q2 and Q3). We thus analyzed all 78 responses. Removing the incomplete responses did not change any of the reported results.

Advising precise asking price. A total of 32 agents (41.02%) reported that they would advise sellers in the market they work in to set a precise asking price. This proportion is larger than 0% (binominal test, $p < .001$), supporting H1. Furthermore, supporting H2, the type of market agents reported working in (buyer’s vs. seller’s market) did not moderate their tendency to advice setting a precise asking price, $\chi^2(1) = .779$, $p = .377$. Specifically, 38.3% (23 out of 60) of the real-estate agents working in a seller’s market, and 50.00% (9 out of 18) of real-estate agents working in a buyer’s market indicated that they would advise sellers to set a precise asking price. Furthermore, the tendency to advice setting a precise asking price was not affected

by years of experience, whether agents worked part time or full time, or whether they mostly worked with buyers or sellers (see Supplementary Online Materials).

Familiarity with the price precision effect. Out of the 72 agents who completed the survey, 12 (16.66%) reported hearing about the findings obtained in Janiszewski & Uy (2008). This proportion was higher than 0% (binominal test, $p < .001$), supporting H3. Agents who reported hearing about the study were as likely to advise precise prices (6 out of 12) as those who did not hear about it (24 out of 60), $\chi^2(1) = .411$, $p = .539$, an analysis that should be interpreted with obvious caution due to the small number of agents who knew about the finding.

Study 2

Surveying real-estate agents working in the Netherlands showed that a substantial proportion (41.02%) of agents would advise sellers to set a precise, rather than round asking price. This advice is unrelated to the type of market agents work in. In fact, 38% of agents working in a seller's market reported they give such advice, which we suggest may be suboptimal. It seems that the idea that precise asking prices may backfire in seller's markets, is not obvious, even for experts. Interestingly, there are more real-estate agents who advise setting precise asking prices than agents who report being familiar with the price precision effect. The finding indicates that scientific knowledge penetrates the market, but slowly. The finding also indicates that real-estate agents may advise setting precise asking prices for other reasons than providing a strong anchor, such as signaling professionalism, knowledge, and confidence (Mason, Lee, Wiley, & Ames, 2013; Jerez-Fernandez, Angulo, & Oppenheimer, 2013).

Study 1's results suggest that setting a precise asking price is a rather common advice that experts give, regardless of the market they operate in. Given the prevalence of the advice, it is important to test whether it is a good one. In Study 2, participants were asked to give

counteroffers to various (round vs. precise) asking prices in a seller's or a buyer's market. As mentioned before, in many real-estate markets a first-price sealed-bid auction style is used, and the winning counteroffer is set as the selling price. Thus, assessing people's counteroffers is a valuable indicator to the potential profit sellers can expect when setting a precise vs. round asking price. In Study 2, we varied the precise asking prices to be either *above* or *below* the round asking price (see Janiszewski and Uy, 2008; Loschelder et al., 2013). We tested a set of pre-registered predictions suggesting that (H4) in a buyer's market, round asking prices lead to *lower* counteroffers than precise asking prices; (H5) in a seller's market, round asking prices lead to *higher* counteroffers than precise asking prices; and (H6) the effect of precise (vs. round) asking price is robust to a variety of demographic factors.

Method

Participants and procedure. The pre-registered plan was to collect responses from 2,000 participants on Amazon Mechanical Turk, to get a sufficient variation of the different demographic variables. The experiment took on average 5 minutes, and respondents were paid \$0.15 for participation. After collecting 152 responses, due to the slow response rate, we increased the payoff for completing the study to \$0.25. The amount participants received for the task did not affect the results (see SOM).

All participants read a scenario in which they were asked to take the role of a person interested in buying an apartment. Participants learned about the asking price of the apartment and were asked to give a counteroffer. Between participants, we manipulated the type of market to be a seller's vs. buyer's market, and the type of asking price to be round vs. precise to the hundreds. For robustness, we further varied the precise asking price to be above vs. below the round asking price. Participant in a seller's [buyer's] market learned that there are more [less]

buyers interested in buying an apartment than sellers interested in selling an apartment in the market, and that buyers in this situation usually offer above [below] the asking price. To increase the number of counteroffers we obtained, participants were presented with three different asking prices that were presented in a random order (see also Janiszewski & Uy, 2008). Participants in the *round* asking price condition were asked to give counteroffers to the asking prices of \$150,000, \$250,000, and \$350,000. Participants in the *precise below* condition provided counteroffers to \$149,800, \$249,800, and \$349,800, and participants in the *precise above* condition provided counteroffers to \$150,200, \$250,200, and \$350,200. These prices were chosen to represent the average house prices in the USA (per Zillow.com). Thus, the full design was 2 (market type: seller's vs. buyer's) by 3 (type of asking price: round vs. precise below vs. precise above) by 3 (price range: ~ \$150,000 vs. ~ \$250,000 vs. ~ \$350,000), design with the first two as between- and the last as within-subjects factors.

After making the three counteroffers, participants answered two questions that served as pre-registered exclusion criteria: (1) a manipulation check question in which participants read a short description of a seller's and a buyer's market and indicated which type of market, a seller's or buyer's market, the scenarios they read illustrated, and (2) an attention check question in which participants were asked to choose the third answer out of three answers. Participants further completed a series of demographic questions, reporting their age, gender, household income, and whether they are or were real-estate agents. Additionally, participants reported whether they had bought or sold, or were in the process of buying or selling, a real-estate property. If yes, they were asked if they use or used a real-estate agent to do so. Finally, participants read a short description of Janiszewski & Uy's (2008) findings and indicated if they were familiar with the findings obtained in that research.

Results

Exclusion. A total of 2086 participants started the survey, and 2027 made counteroffers to all three prices. Excluding participants based on the two preregistered criteria removed 27 participants (1.33%) who did not answer the attention check or failed it, and 193 participants (9.65%) who did not answer the manipulation check question correctly. Thus our total sample was 1807 participants (total dropout of 13.37%). The third preregistered exclusion criterion was eliminating counteroffers that were inconsistent with the market's rules. That is, counteroffers that were higher than the asking price in a buyer's market and lower than the asking price in a seller's market. In total 23 counteroffers in the buyer's market conditions were excluded: 6 in the round asking price condition, 9 in the precise below, and 8 in the precise above condition. In the seller's market condition, 431 counteroffers had to be excluded: 135 in the round asking price condition, 148 in the precise below, and 148 in the precise above condition. Overall, participants made more counteroffers that were inconsistent with the rules of the market in the seller's, compared to the buyer's market. This suggests that participants were less willing to obey to the market rules when it required them to make counteroffers that were higher, compared to lower than the asking price. As we detail later, in Study 3 we solved this high exclusion rate by forcing participants to provide offers that matched the market they were placed in.

After excluding counteroffers based on the preregistered criteria, the data still contained unanticipated extreme counteroffers. Specifically, there were extremely low counteroffers (e.g., \$15, \$225) and extremely high counteroffers (e.g., \$1,649,000, \$2,498,000). There are three potential reasons for such values: (1) typing errors (e.g., accidentally adding a zero and typing \$2,498,000 when intending to type \$249,800), (2) making counteroffers in thousands of dollars, without adding zeros (e.g., typing \$225, to indicate \$225K), or (3) not taking the task seriously

(e.g., providing a counteroffer of \$15). To minimize the effects of such outliers, counteroffers that were more than three standard deviations higher or lower than the mean counteroffer in each price range were excluded (see also Thomas, Simon, Kadiyali, 2010). Thus, the final data set contained a total of 2127 counteroffers in the seller's market and 2754 counteroffers in the buyer's market condition.

Counteroffers. Table 1 presents the mean and standard deviation of the counteroffers per market type, type of asking price, and price range conditions. To assess the extent to which participants adjusted their counteroffers away from the asking price we calculated the absolute difference between the asking price and the counteroffer for each price range condition. Like Janiszewski & Uy (2008), we collapsed the data across the three price ranges (~ \$150,000; ~ \$250,000; ~ \$350,000). Doing so was justifiable by the results of an ANOVA conducted using standardized scores, showing the absence of a three-way interaction between Price Range, Market Type, and Type of Asking Price ($p = .163$; see SOM).

A 2 (Type of Market: Buyer's vs. Seller's) by 3 (Type of Asking Price: Round vs. Precise Below vs. Precise Above) ANOVA predicting the absolute difference between the asking price and the counteroffer revealed a main effect for market type, $F(1, 1676) = 776.78, p < .001, \eta^2 = .317$. Participants in the buyer's market made counteroffers that were further away, in absolute terms, from the asking price ($M = \$35,402.83, SD = 22,414.17$) than participants in the seller's market ($M = \$10,437.82, SD = 12,151.61$). Furthermore, supporting H4 and H5, a main effect for the type of asking price was found, $F(2, 1676) = 28.00, p < .001, \eta^2 = .032$. Planned contrast analysis revealed that participants adjusted away more, in absolute terms, when the asking price was round ($M = \$28,796.10, SD = 22,838.25$), compared to precise ($M = \$22,010.76, SD = 21,717.96$), $p < .001$. The absolute adjustment did not differ between the precise below ($M =$

\$21,098.48, $SD = 21,394.32$) and precise above condition ($M = \$22,882.74$, $SD = 22,006.40$), $p = .238$, see Figure 1. Importantly, the interaction between the Type of Asking Price and Market Type was not significant, $F(1, 1676) = 1.27$, $p = .279$, suggesting that the effect of setting a precise asking price was similar in both market settings: it led to counteroffers closer to the asking price. From the seller's perspective, a desired result in a buyer's market, and a non-desired result in a seller's market.

Figure 1. The absolute gap between asking price and counteroffers per Market Type and Type of Asking Price condition

Exploratory Analyses

According to Janiszewski & Uy's (2008), precise, compared with round, asking prices lead to less adjustment away from the asking price because precise numbers make people consider the scale on a finer resolution. To test the proposed mechanism, we assessed whether participants used round counteroffers more when the asking price was round compared to precise. We followed Janiszewski & Uy's (2008) and (1) coded counteroffers as round if they were multiples of \$5,000, and not round otherwise, and (2) collapsed the precise above and precise below

conditions. Because participants provided counteroffers to three different asking price ranges and could make a round counteroffer to one asking price, but a non-round counteroffer to the others, we ran separate analysis for each asking price range condition. Replicating Janiszewski and Uy's (2008) finding, in all price ranges, participants made more round counteroffers to round asking prices than to precise asking prices, an effect that was not moderated by market type.

Specifically, for ~150K asking prices, participants made more round counteroffers when the asking price was round (92.17%), compared to precise (70.21%), $B = -1.82$, $p = .006$. This effect was not moderated by Market Type, the interaction between Market Type and Type of Asking Price was not significant, $p = .853$. The same pattern emerged in the other two asking price ranges. For ~250K asking prices, participants made more round counteroffers when the asking price was round (93.46%), compared to precise (73.41%), $B = -1.61$, $p = .025$, and the effect was not moderated by Market Type, $p = .856$. For ~350K asking prices, participants made more round counteroffers when the asking price was round (94.55%), compared to precise (74.43%), $B = -1.49$, $p = .049$, which again was not moderated by Market Type, $p = .599$.

Study 3

As predicted, Study 2 revealed that compared to round, precise asking prices lead to counteroffers that are closer to the asking price. Importantly, the effect occurs both in seller's and buyer's markets. These results indicate that whereas in a buyer's market sellers should set precise asking prices, as they will lead to counteroffers that are beneficial to them; in seller's markets they should not. Demonstrating the *backfiring precision effect*, setting a precise asking price, compared to a round one, in a seller's market is less profitable for the seller.

Study 2 employed asking prices that were precise to the hundreds. While such precision level exists in various housing markets, asking prices that are precise to the thousands (e.g.,

\$151,000) are more common. Study 3 assessed whether precision of asking prices to the thousands (rather than hundreds) is already enough to result in a backfiring effect in seller's markets. Study 3 focused only on a seller's market and similar to Study 2, asked participants to provide counteroffers to different asking prices. We manipulated the level of precision to be round vs. precise to the thousands vs. precise to the hundreds. As in Study 2, we also manipulated the precision to be above or below the round asking price. Our goal was twofold: (1) to replicate the results obtained in Study 2, and (2) to assess whether the *backfiring precision effect* extends to a lower level of precision (i.e., precision to the thousands).

Participants and procedure. We conducted a priori power calculation using G*Power 3.0.10 software to determine the minimum cell sizes. We used the standard α -level of .05 as statistical significance and 99% power to detect the medium size effect that we found in Study 2 ($\eta^2 = .032$; $f = .1818$) which indicated that a total sample size needed is $n = 770$. To stay on the conservative side we pre-registered and planned to collect a total of 1000 participants on Amazon Mechanical Turk. The study took 5 minutes and participants received \$0.25 for participation. Participants who took part in Study 2 could not take part in Study 3.

All participants read the same scenario as participants who were in the seller's market condition in Study 2. Between participants, we manipulated the type of asking price to be round vs. precise to the hundreds vs. precise to the thousands. As in Study 2, for robustness we further varied the precise asking prices to be above vs. below the round asking price and presented each participant with three asking prices in a random order. Participants in the *round* asking price condition were asked to give counteroffers to the asking prices of \$150,000, \$250,000, and \$350,000. Participants in the *precise to the hundreds below* condition provided counteroffers to \$149,800, \$249,800, and \$349,800, and participants in the *precise to the hundreds above*

condition provided counteroffers to \$150,200, \$250,200, and \$350,200, as in Study 2.

Participants in the *precise to the thousands below* condition provided counteroffers to \$149,000, \$249,000, and \$349,000, and participants in the *precise to the thousands above* condition provided counteroffers to \$151,000, \$251,000, and \$351,000. Thus, the complete design was a 5 (Type of Asking Price: Round vs. Precise to the Hundreds Below vs. Precise to the Hundreds Above vs. Precise to the Thousands Below vs. Precise to the Thousands Above) by 3 (Price Range: ~ \$150,000 vs. ~ \$250,000 vs. ~ \$350,000) design with the first as a between- and the second as a within-subjects factor.

To verify participants' counteroffers were appropriate in a seller's market (i.e., higher than the asking price), participants could only provide counteroffers that were higher than, or equal to the asking price. After making the three counteroffers, participants answered the same two questions that served as a pre-registered exclusion criteria as in Study 2. In Study 3 we further added a third pre-registered exclusion criterion of excluding counteroffers that are three standard deviation above the mean in each price range. Finally, after the main task, participants completed the same a series of demographic questions as in Study 2.

Results

Exclusion. A total of 1029 participants started the survey, and 1021 made counteroffers to all three prices. Following the pre-registered exclusion criteria, 15 participants who did not answer the attention check or failed it, 104 participants who did not answer the manipulation check question correctly were excluded. Furthermore, 3 counteroffers that were higher than 3 SD above the mean were excluded as well. The final sample had 902 participants (total dropout of 12.34%), who made in total 2703 counteroffers.

Counteroffers. Table 2 presents the mean and standard deviation of the counteroffers per type of asking price, and price range condition. To assess the extent to which participants adjusted their counteroffers away from the asking price we calculated the difference between the counteroffer and the asking price for each price range condition. Like Janiszewski & Uy (2008) and as we did in Study 2, we collapsed the data across the three price ranges (~ \$150,000; ~ \$250,000; ~ \$350,000). This was justifiable by the results of an ANOVA conducted on the standardized scores, showing the absence of the two-way interaction between Price Range and Type of Asking Price ($p = .538$; see SOM).

A one way ANOVA with 5 (Type of Asking Price: Round vs. Precise to the Hundreds Below vs. Precise to the Hundreds Above vs. Precise to the Thousands Below vs. Precise to the Thousands Above) ANOVA predicting the difference between the counteroffer and the asking price revealed a main effect for type of asking price, $F(4, 897) = 5.08, p < .001, \eta^2 = .022$. Planned contrast analysis revealed that participants adjusted away more when the asking price was round ($M = \$14,615.28, SD = 19,435.11$), compared to precise ($M = \$9,913.64, SD = 12,282.59$), $t(897) = 4.06, p < .001$. Furthermore, participants in the precise to the thousands condition adjusted away more ($M = \$10,936.80, SD = 12,970.66$) than those who in the precise to the hundreds condition ($M = \$8,879.02, SD = 11,472.98$), $t(897) = -1.96, p = .049$. As in Study 2, the adjustment did not differ between the precise to the hundreds below ($M = \$9,017.30, SD = 12,354.25$) and precise to the hundreds above condition ($M = \$8,735.20, SD = 10,511.99$), $p = .997$. Lastly, the adjustment did not differ between the precise to the thousands below ($M = \$10,939.20, SD = 12,156.94$) and precise to the thousands above condition ($M = \$10,934.52, SD = 13,733.13$), $p = .849$, see Figure 2.

Figure 2. The gap between the counteroffer and the asking price per type of asking price condition

Exploratory Analyses

As in Study 2 we assessed the extent to which precise asking price makes people consider the price scale on a finer resolution. As in Janiszewski & Uy's (2008) and in Study 2 we (1) coded counteroffers as round if they were multiples of \$5,000, and not round otherwise, and (2) collapsed the precise above and precise below conditions, separately to precise to the hundreds and precise to the thousands conditions. Because participants provided counteroffers to three different asking price ranges and could make a round counteroffer to one asking price, but a non-round counteroffer to the others, we ran separate analysis for each asking price range condition.

Replicating the results reported in Janiszewski and Uy's (2008) and of Study 2, a Chi-square analysis revealed differences in the proportion of round counteroffers between the three conditions (Round vs. Precise to the Hundreds vs. Precise to the Thousands), for ~ 150K, $\chi^2(2) = 46.59$, $p < .001$, Cramer's $V = .227$; for ~ 250K, $\chi^2(2) = 40.81$, $p < .001$, Cramer's $V = .213$;

for $\sim 350\text{K}$, $\chi^2(2) = 52.24$, $p < .001$, Cramer's $V = .241$. Participants made more round counteroffers in the round asking price condition compared with the precise settings. Specifically, for $\sim 150\text{K}$ asking prices, participants made more round counteroffers when the asking price was round (85.86%), compared to precise (60.80%), $\chi^2(1) = 40.93$, $p < .001$, Cramer's $V = .213$. Within the two precise conditions, participants made more round counteroffers when the asking price was precise the thousands (65.00%), compared to precise to the hundreds (56.58%), $\chi^2(1) = 5.32$, $p = .021$, Cramer's $V = .086$.

Similarly, for $\sim 250\text{K}$ asking prices, participants made more round counteroffers when the asking price was round (85.24%), compared to precise (60.44%), $\chi^2(1) = 39.68$, $p < .001$, Cramer's $V = .210$. There was no difference between the proportion of round counteroffers when the asking price was precise the thousands (62.32%) and precise to the hundreds (58.54%), $\chi^2(1) = 1.07$, $p = .300$.

Finally, for $\sim 350\text{K}$ asking prices, participants made more round counteroffers when the asking price was round (90.21%), compared to precise (62.90%), $\chi^2(1) = 50.61$, $p < .001$, Cramer's $V = .237$. There was no difference between the proportion of round counteroffers when the asking price was precise the thousands (60.67%) and precise to the hundreds (65.09%), $\chi^2(1) = 1.50$, $p = .220$.

Single paper meta-analysis

To estimate the aggregate precision effect in the sellers' market, we conducted a meta-analysis comparing the gap between the counteroffers and the asking prices in the round asking price condition to (1) the gap between counteroffers and the counteroffers in the precise to the hundreds asking prices condition (Study 2 and Study 3), and (2) the gap between counteroffers and the asking price in the precise to the thousands asking price condition (Study 3). Using a

random effects model with the bias corrected standardized difference (Hedges' g) and a restricted maximum likelihood estimation of the inter-study heterogeneity (τ) we find an overall significant effect ($g = -0.37$, 95%CI[-0.51;-0.24], $z = -9.52$, $p < .0001$), indicating a medium-sized robust effect for all comparisons (see Figure 3).

Figure 3. Overview of the backfiring precision effect in Study 2 and Study 3, comparing the gap between counteroffers and the asking price in the precise to the hundreds (Study 2 and 3) and the thousands (Study 3) conditions to the gap between the counteroffers and the asking price in the round asking price conditions

Robustness analysis

Table 3 represents the means and standard deviation of the absolute gap between the counteroffers and the asking price in Study 2 and 3, separated by different conditions, and whether participants had experience with buying or selling real-estate property. ANOVA analyses, followed by planned contrasts revealed that participants adjusted away more when the asking price was round, compared to precise. In Study 2, the overall adjustment away from the asking price was larger when the asking price was round, compared to precise (to the hundreds),

and experience with buying or selling real-estate property did not affect the results. In Study 3, overall, the adjustment away from the asking price was larger when the asking price was round, compared to precise, and more when it was precise to the hundreds than precise to the thousands. This was also the case for participants who had no experience with selling property, and those who had experience with buying property.

Interestingly, for those who had experience with selling real-estate property, and for those who had no experience with buying property, although the direction of the effect was consistent with predictions, it did not reach statistical significance. Assessing the robustness of this (lack of) effect, we conducted two separated meta-analysis for participants (1) with experience of selling property and (2) no experience with buying property. We focused on the round vs. precise to the hundreds contrast, which was constant between Study 2 and Study 3, allowing for a direct comparison. A meta- analysis comparing the gap between the counteroffers and the asking prices in the round asking price condition to the gap in the precise to the hundreds in Study 2 and 3 revealed that the effects were significant both for participants with experience with selling real-estate property ($g = -0.51$, 95% CI[-0.80;-0.22]), and no experience with buying real-estate property ($g = -0.23$, 95% CI[-0.40;-0.06]), see Figure 4. We thus conclude that the *backfiring precision effect* is robust to experience in the real-estate market, confirming H6. The SOM provide further robustness analyses for other variables measured.

(A) Experience with selling

(B) No experience with buying

Figure 4. Overview of the backfiring precision effect in Study 2 and Study 3, comparing the gap between counteroffers and the asking price in the precise to the hundreds (Study 2 and 3) to the gap between the counteroffers and the asking price in the round asking price conditions, separately for participants (A) with experience with selling real-estate property, and (B) no experience with buying real-estate property

Discussion

Results of Study 3 show that the *backfiring precision effect* occurs not only for precision to the hundreds, but also for a lower level of precision, to the thousands. Specifically, participants adjusted away more when the asking price was round compared to precise to the thousands, and more when the asking price was precise to the thousands compared to precise to the hundreds. One striking finding is that by setting a round asking price of say \$350,000, a seller can expect to get higher counteroffers (on average: \$365,815.52) compared with setting a more precise asking price that is *higher* by one thousand dollars, \$351,000 (on average: \$363,248.65). Paradoxically, by setting a lower asking price, sellers can earn more. Furthermore, supporting the mechanism

proposed by Janiszewski and Uy's (2008), precise asking prices, compared to round ones, lead to a higher number of precise counteroffers, suggesting that participants indeed use a more fine-tune scale when providing a counteroffer to precise, rather than round asking price. Additional analyses revealed that the *backfiring precision effect* was robust to having experience with selling or buying a real-estate property, and a single paper meta-analysis further revealed that the overall, medium sized effect is significant and robust.

General discussion

Sellers are often advised to set precise asking prices, both in buyer's and seller's markets. Here however, we report a *backfiring precision effect*, suggesting the advice should be restricted to sellers operating in a buyer's market. Specifically, compared to round asking prices, precise asking prices resulted in counteroffers closer to the asking price in both seller's and buyer's markets. Receiving a counteroffer that is close to the asking price is desirable for sellers operating in a buyer's market, where counteroffers (and thus selling prices) are typically below the asking price. In a seller's market, however, buyers typically make counteroffers above the asking price, and setting precise asking prices in such markets backfires. Sellers wish to receive counteroffers that are the furthest away possible from the asking price – and are thus better off by setting round rather than precise asking prices. These results are robust to different levels of precision (thousands and hundreds) and occur even among those who have experience in the real estate market.

Our results further shed light on the mechanism underlying the effect. In line with Janiszewski and Uy (2008), we found that round asking prices lead to more round counteroffers compared to precise asking prices, both in buyer's and seller's markets. This suggests that people adjust their counteroffers on a more fine-grained scale when faced with precise (vs. round)

asking prices. For instance, instead of adjusting on a scale of tens of thousands of dollars, a more precise asking price will make people adjust on a scale of thousands of dollars. When people adjust a similar number of steps away from the asking price, those steps will be smaller when the asking price is precise rather than round, resulting in a counteroffer closer to the asking price. Understanding the mechanism is important, as our findings are not restricted to the real estate market. The *backfiring precision effect* should occur in all settings in which people bid above a starting price, as is the case in various auctions, second hand online stores, and more. When anticipating a bidding war that may lead to offers above the starting price in any type of auction, people would likely be better off setting a round rather than precise asking price.

That said, it is easiest to draw a straightforward practical implication for the real estate market, the focal point of the current investigation. By setting a precise asking price in a seller's market, sellers lose money. As we reported in our opening example, in September 2017, in the heated Amsterdam real estate market more than 60% of the listed properties had asking prices that were precise to the thousands, or even more precise, with a median asking price of €375,000. In the seller's market setting used in study 3, the average counteroffer to a round asking price was 5.84% higher than the asking price, whereas the average counteroffer to a precise to the thousands asking price was 4.42% higher than the asking price. Thus, by setting a precise to the thousands instead of a round asking price, sellers lose a potential additional profit of 1.42% of their asking price. This back of the envelope calculation suggests that on average, sellers in Amsterdam who have set precise asking prices, missed out on more than €5,000 of potential profit per property.

Although we found that precise asking prices in a seller's market have overall negative effects, in some specific settings, they may have benefits, for example, by signaling expertise.

Indeed, people who set precise asking prices are perceived as more competent (Mason, Lee, Wiley, & Ames, 2013) and confident (Jerez-Fernandez, Angulo, & Oppenheimer, 2014) than people who set round prices. Precise asking prices may signal the seller's negotiation savviness, which can influence buyers' willingness to negotiate and engage in a financial transaction with the seller in the first place. It can be interesting to assess the attributions people make about sellers who set round vs. precise asking prices in a seller's market. Are sellers who set precise asking prices in a seller's market perceived as more competent even though precise asking prices result in worse outcomes? And how do these attributions affect people's willingness to enter a negotiation and conduct business with sellers? These questions seem like a promising avenue for future exploration

Conclusion

Precise asking prices strengthen the anchoring effect on negotiation counteroffers. Therefore, sellers are often advised to set precise asking prices. Here, we show the *backfiring precision effect*. Specifically, although precise asking prices are beneficial in a buyer's market, in a seller's market, where potential buyers make counteroffers above the asking price, they are detrimental. Real-estate agents and sellers should consider the type of market they operate in, when setting their asking price. Whereas a precise asking price is advisable in a buyer's market, round numbers rule in a seller's market.

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Table 1. Means (SD) counteroffers (in \$) per Market Type, Type of Asking Price and Price Range in Study 2

Price range	Asking price			Counteroffers					
				Buyer's market			Seller's market		
	Round	Precise below	Precise above	Round	Precise below	Precise above	Round	Precise below	Precise above
~150K	150,000	149,800	150,200	120,177.41 (16,285.20)	125,945.05 (19,241.77)	124,979.04 (20,402.26)	163,334.52 (13,709.25)	157,109.02 (11,164.28)	157,725.92 (10,498.83)
N				310	296	317	252	232	236
~250K	250,000	249,800	250,200	208,558.03 (24,428.35)	218,614.09 (23,749.12)	217,146.51 (22,045.99)	264,800.08 (15,408.44)	258,534.02 (13,716.31)	259,069.60 (11,866.62)
N				310	294	314	241	234	230
~350K	350,000	349,800	350,200	299,342.44 (29,434.16)	312,870.93 (23,901.42)	308,954.45 (29,599.14)	365,518.33 (15,448.88)	358,470.52 (12,061.05)	359,620.47 (11,298.75)
N				311	289	313	240	232	230
Overall				209,225.12 (24,053.36)	216,583.81 (30,138.08)	215,537.48 (27,724.41)	259,860.28 (27,790.27)	256,959.66 (21,393.39)	256,512.72 (23,908.08)

Table 2. Means (SD) counteroffers (in \$) per Type of Asking Price and Price Range in Study 3

Price range	Asking price					Counteroffers				
	Round	Precise to the thousands		Precise to the hundreds		Round	Precise to the thousands		Precise to the hundreds	
		Below	Above	Below	Above		Below	Above	Below	Above
~150K	150,000	149,000	151,000	149,800	150,200	163,796.55 (19,585.18)	159,580.05 (15,144.04)	160,600.31 (12,693.80)	158,446.15 (14,938.72)	158,776.33 (12,027.09)
N						184	176	184	182	175
~250K	250,000	249,000	251,000	249,800	250,200	264,292.44 (19,776.78)	259,706.73 (13,198.29)	262,005.95 (16,996.21)	258,904.66 (15,280.49)	258,552.59 (10,934.54)
N						183	176	185	182	175
~350K	350,000	349,000	351,000	349,800	350,200	365,815.52 (23,715.14)	360,530.85 (14,058.74)	363,248.65 (17,912.87)	359,101.09 (12,864.92)	359,488.06 (11,323.50)
N						184	176	185	182	174
Overall						264,615.28 (19,435.11)	259,939.20 (12,156.94)	262,204.79 (14,008.00)	258,817.30 (12,354.25)	258,649.49 (11,207.70)

Table 3. Means (SD) of the absolute gap between counteroffers and asking price per studies, conditions, and having vs. not experience with buying and selling real-estate property. Significance level: * < .05; ** < .01, *** < .001.

	Seller's market		Buyer's market	
	n	Absolute gap (asking price - counteroffer)	n	Absolute gap (asking price - counteroffer)
Study 2				
Complete sample				
Round	260	14091.05 (13567.94)	315	40933.61 (21789.66)
Precise [100s]	486	8483.42 (10841.18)	621	32597.38 (22220.75)
Difference (Round - Precise 100s)		5607.63***		8336.23***
Experience with selling				
Round	71	13227.70 (12567.76)	75	40467.82 (21672.47)
Precise [100s]	104	6579.35 (8868.50)	144	28854.35 (17352.40)
Difference (Round - Precise 100s)		6648.35***		11613.47***
No experience with selling				
Round	188	14367.94 (13965.18)	239	41076.71 (21915.10)
Precise [100s]	379	9024.16 (11305.38)	475	33543.88 (23199.83)
Difference (Round - Precise 100s)		5343.78***		7532.82***
Experience with buying				
Round	149	14036.91 (12718.27)	166	41541.69 (21621.36)
Precise [100s]	262	7211.77 (8025.34)	288	30276.89 (20534.67)
Difference (Round - Precise 100s)		6825.15***		11264.80***
No experience with buying				
Round	110	14201.58 (14752.05)	149	40256.15 (22028.75)
Precise [100]	223	10015.52 (13283.72)	332	34558.52 (23448.13)
Difference (Round - Precise 100s)		4186.06**		5697.64**
Study 3				
Complete sample				
Round	184	14615.28 (19435.11)		
Precise [overall]	718	9913.64 (12282.59)		
Difference (Round - Precise)		4701.64***		

Precise [1000s]	361	10936.80 (12970.66)
Precise [100s]	357	8879.02 (11472.98)
Difference (1000s - 100s)		2057.78*
Experience with selling		
Round	34	12563.75 (12394.80)
Precise [overall]	177	9836.33 (12028.05)
Difference (Round - Precise)		2727.42
Precise [1000s]	94	10983.16 (11932.78)
Precise [100s]	83	8537.53 (12075.27)
Difference (1000s - 100s)		2445.63
No experience with selling		
Round		
Precise [overall]	150	15080.30 (20705.36)
Difference (Round - Precise)	539	9966.54 (12390.65)
Precise [1000s]		5113.76***
Precise [100s]	266	10942.75 (13358.32)
Difference (1000s - 100s)	273	9015.37 (11312.71)
Experience with buying		1927.38
Round		
Precise [overall]	87	18079.49 (24578.83)
Difference (Round - Precise)	373	9388.42 (11652.93)
Precise [1000s]		8691.07***
Precise [100s]	190	10588.81 (12638.81)
Difference (1000s - 100s)	183	8142.13 (10421.18)
No experience with buying		2446.68
Round		
Precise [overall]		
Difference (Round - Precise)	97	11508.21 (12578.39)
Precise [1000s]	345	10481.48 (12923.91)
Precise [100s]		1026.73
Difference (1000s - 100s)	171	11323.47 (13356.29)
	174	9654.03 (12467.48)
		1669.44

In a seller's market, setting precise asking prices backfires

Supplementary Online Materials

Study 1 – Additional results

In our sample, real estate agents had on average 18.69 years of experience ($SD_{\text{years}} = 10.93$). Years of experience was not correlated with the tendency to advice setting a precise asking price ($r = -.025, p = .833$). Additionally, most of the responders worked full time as a real-estate agent ($n=65, 90.27\%$), and only a small fraction worked part time ($n=4, 5.55\%$), or not at all ($n=3, 4.16\%$). This did not affect agents' advice to set a precise asking price, $\chi^2(2) = 1.989, p = .370$, nor did the type of client (sellers, buyers, or equally both) that the real-estate agents mostly worked with, $\chi^2(2) = 3.959, p = .138$. Removing those who indicated they do not work as real-estate agents did not change any of the reported results.

Study 2 – Additional results

Z score analysis. As in Janiszewski & Uy (2008), we calculated the z-scores of the absolute difference between the asking price and the counteroffer for each price condition. A 2 (type of market: buyer's vs. seller's) by 3 (type of asking price: round vs. precise below vs. precise above) by 3 (asking price size: ~150,000 vs. ~250,000 vs. ~350,000) ANOVA with the first two factors as between and the last as within subject revealed no main effect for the asking price size, $p = .39$, nor a three way interaction between the asking price size, type of market and type of asking price, $p = .16$. We thus, just as in Janiszewski & Uy (2008), collapsed the data across the different asking prices for our main analysis (see manuscript). Further analyzing the z-scores revealed consistent results for the counteroffers. That is, we find a main effect for type of market, $F(1, 1527) = 749.60, p < .001, \eta^2 = .329$, and a main effect for the type of asking price $F(2, 1527) = 39.71, p < .001, \eta^2 = .049$. Planned contrast revealed a significant difference between the round conditions and the two precise asking price conditions, $p < .001$. The difference between the precise below and precise above conditions did not reach significance, $p = .061$. The interaction between the type of asking price and market type was not significant, $p = .233$.

Payoff for task. A 2 (type of market) by 3 (type of asking price) by 2 (payoff for task: \$0.15 vs. \$0.25) ANOVA revealed no main effect for payoff, $p = .107$. The two and three-way interactions with payoff for task were also not significant p 's $> .366$. The main effects for type of market ($p < .001$) and type of asking price ($p = .001$) were significant. Planned contrast revealed a difference in the absolute adjustment away from the asking price between the round and precise conditions, $p < .001$. There was no difference between the precise below and precise above conditions, $p = .734$. The interaction between the type of asking price and market type was not significant, $p = .856$.

Additional robustness check. As there was no difference between the adjustment in the precise below and precise above conditions, we collapsed the two precise conditions in the robustness analysis. Analysis separating the precise condition into precise below and precise above did not change the obtained results.

Experience with buying real estate property. Out of 1804 participants who indicated whether they have experience with buying a real estate property, 931 (51.6%) reported that they bought a house or an apartment, with the majority ($n=676$, 72.6%) employing a real-estate agent. A 2 (market type: seller's vs. buyer's) by 2 (type of asking price: round vs. precise) by 2 (experience with buying a real estate property: yes vs. no) ANOVA revealed that the main effect for experience with buying real-estate property was not significant, $p = .116$. Furthermore, the three way interaction between experience with buying property, type of asking price, and type of market was not significant, $p = .441$. The main effects for market type and type of asking price remained significant, p 's $< .001$, with round asking price showing a larger absolute adjustment away from the asking price, compared to precise asking price (see main text for means). Importantly, the two way interaction between asking price and market type was not significant, $p = .117$.

Experience with selling real estate property. Out of 1800 participants who answered the question, 422 (23.4%) indicated they sold a house or an apartment. The majority ($n = 345$, 81.75%) employed a real-estate agent when they did so. A 2 (market type: seller's vs. buyer's) by 2 (type of asking price: round vs. precise) by 2 (experience with selling a real estate property: yes vs. no) ANOVA revealed that a main effect for experience with selling real-estate property, $F(1, 1667) =$

4.09, $p = .043$, $\eta^2 = .002$. Participants who had experience with selling a house or an apartment adjusted less in absolute terms ($M = \$22,369.37$; $SD = 20,143.17$) compared with those who had no such experience ($M = \$24,880.56$; $SD = 22,855.18$). The three way interaction between experience with selling property, type of asking price, and type of market was not significant, $p = .527$. The main effects for market type and type of asking price remained significant, p 's $< .001$, with round asking price showing a larger absolute adjustment away from the asking price, compared to precise asking price (see main text for means). Importantly, the two way interaction between asking price and market type was not significant, $p = .103$.

Owning a real estate property. Out of 1807 participants who answered whether they owned a house or apartment, 866 (47.92%) answered "yes". A 2 (market type: seller's vs. buyer's) by 2 (type of asking price: round vs. precise) by 2 (ownership: yes vs. no) ANOVA revealed no main effect for ownership, $p = .925$. The three-way interaction between ownership, market type, and type of asking price was not significant $p = .331$. The main effects for market type, as well as for type of asking price were significant, p 's $< .001$. Planned contrast revealed a difference in the absolute adjustment away from the asking price between the round and precise conditions, $p < .001$. Round asking price showing a larger absolute adjustment away from the asking price ($M = 28,796.10$, $SD = 22,838.25$), compared to precise asking price ($M = 22,010.76$, $SD = 21,717.96$). Importantly, the two way interaction between asking price and market type was not significant, $p = .115$.

Household income. Participants selected one of 12 annual household income categories: (1) below 10,000; (2) between 10,000 and 19,999; (3) between 20,000 and 29,999; (4) between 30,000 and 39,999; (5) between 40,000 and 49,999; (6) between 50,000 and 59,999; (7) between 60,000 and 69,999; (8) between 70,000 and 79,999; (9) between 80,000 and 89,999; (10) between 90,000 and 99,999; (11) between 99,999 and 149,999; and (12) above 150,000. The most frequent (13.31%) household income category that was chosen was "between 30,000 and 39,000" and the least frequent category (2.88%) was "above 150,000". Due to the many categories we treated household income as a continuous measure and conducted a 2 (market type) by 3 (type of asking price: round vs. precise) by household income (as a continuous measure) ANCOVA. Results revealed a main effect for household

income, $F(1, 1671) = 13.01, p < .001, \eta^2 = .008$. The higher the household income, the less participants adjusted away from the asking price (in absolute terms), $r = -.079, p = .001$. The two way interaction between market type and household income was significant, $F(1, 1671) = 6.19, p = .012, \eta^2 = .004$. Interestingly, the correlation between household income and adjustment away from the asking price is significant in a buyer's market ($r = -.115, p < .001, n = 935$) but not in a seller's market ($r = -.029, p = .423, n = 744$).

Any other interaction with household income was not significant, p 's $> .367$, indicating that our results are robust to household income. The main effect for market type, as well as type of asking price were significant, $p < .001$ and $p = .002$, respectively. The absolute adjustment away from the asking price was larger when the asking price was round ($M = 28,828.85, SD = 22,844.66$), compared to precise ($M = 22,005.53, SD = 21,771.42$). The interaction between the type of asking price and market type was not significant, $p = .989$.

Familiarity with the price precision effect. Only 19 participants (1.05%) indicated they were familiar with the findings obtained in Janiszewski & Uy (2008). The small number of participants per cell did not allow analyzing the data further.

Additional factors. Overall, 42 (2.3%) participants indicated they are in the process of selling a house (with the majority, $n = 24, 57.1\%$, using real-estate agents). A total of 121 participants (6.7%) indicated they are in the process of buying a house (with the majority, $n = 75, 62.0\%$, using real-estate agents). Lastly, 34 participants (1.9%) indicated they are or were real-estate agents. Due to the small number of participants in each cell we could not analyze the robustness of the results across these factors.

Study 3

Z score analysis. As in Janiszewski & Uy (2008), we calculated the z-scores of the absolute difference between the asking price and the counteroffer for each price condition. An ANOVA with 5 (type of asking price: round vs. precise to the hundreds below vs. precise to the hundreds above vs. precise to the thousands below vs. precise to the thousands above) ANOVA with the first factor as between and the second as within subject revealed no main effect for the asking price size, $p = .999$,

nor a two way interaction between the asking price size, type of market and type of asking price, $p = .885$. We thus, just as in Janiszewski & Uy (2008), collapsed the data across the different asking prices for our main analysis (see manuscript). Collapsing the three Z scores of the asking price sizes and conducting a one way ANOVA with 5 (type of asking price: round vs. precise to the hundreds below vs. precise to the hundreds above vs. precise to the thousands below vs. precise to the thousands above) predicting the average Z score revealed consistent results for the counteroffers. That is, we find a main effect type of asking price $F(4, 897) = 5.06, p < .001, \eta^2 = .022$. Planned contrast revealed a significant difference between the round conditions and all the precise asking price conditions, $t(897) = 4.05, p < .001$. The difference between the precise to the hundreds and precise to the thousands asking prices was marginally significant, $p = .051$. Furthermore, there were no differences between the precise to the thousands below and precise to the thousands above conditions, $p = .983$. There was also no difference in the precise to the hundreds below and precise to the hundreds above asking price condition, $p = .848$.

Robustness checks. As in Study 2 we collapsed the two precise to the hundreds below and precise to the hundreds above conditions. We further collapsed the precise to the thousands below and precise to the thousands above conditions. Analysis separating the precise condition into precise above and precise below did not change the obtained results.

Experience with buying real estate property. Out of 902 participants who indicated whether they have experience with buying a real estate property, 460 (50.99%) reported that they bought a house or an apartment, with the majority ($n=343, 74.56\%$) employing a real-estate agent. A 3 (type of asking price: round vs. precise to the hundreds vs. precise to the thousands) by 2 (experience with buying a real estate property: yes vs. no) ANOVA revealed no main effect for experience with buying a real estate property, $p = .140$. The main effect for type of asking price was significant, $F(2, 896) = 10.82, p < .001, \eta^2 = .024$. Furthermore, the two-way interaction between experience with buying and type of asking price was significant $F(2, 896) = 5.62, p = .004, \eta^2 = .012$.

To identify simple contrasts we ran a one-way ANOVA with 6 levels (2 types of asking price $\times$ 2 having/not experience with buying real-estate), predicting the difference between the counteroffer and the asking price. Planned contrast analysis revealed that among participants who had experience

in buying real-estate properties, adjustments were larger when the asking price was round compared to precise, $p < .001$. Participants in the precise to the thousands condition adjusted away similarly to those in the precise to the hundreds condition, $p = .091$. Among participants who had no experience with buying a real estate property, there was no difference in adjustment between the round and the precise asking prices, $p = .525$. Further, there was no difference between precise to the thousands and precise to the hundreds condition $p = .267$.

Experience with selling a real estate property. Out of 902 participants who answered the question, 211 (23.4%) indicated they sold a house or an apartment. The majority ($n=175$, 82.93%) employed a real-estate agent when they did so. A 3 (type of asking price: round vs. precise to the hundreds vs. precise to the thousands) by 2 (experience with selling a real estate property: yes vs. no) ANOVA revealed no main effect for experience with selling a real estate property, $p = .414$. The main effect for type of asking price, however, remained significant, $F(2, 894) = 5.15$, $p = .006$, $\eta^2 = .011$. Furthermore, the two-way interaction between experience with selling and type of asking price was not significant, $p = .717$.

Owning real estate property. Out of 902 valid responses, 420 respondents (46.56%) indicated that they owned a real estate property. A 3 (type of asking price: round vs. precise to the hundreds vs. precise to the thousands) by 2 (ownership: yes vs. no) ANOVA revealed no main effect for ownership, $p = .302$. The main effect for type of asking price was significant, $F(2, 896) = 11.84$, $p < .001$, $\eta^2 = .026$. Furthermore, the two-way interaction between ownership and asking price was significant $F(2, 896) = 5.28$, $p = .005$, $\eta^2 = .012$. We thus ran a one-way ANOVA with 6 levels (3 types of asking price $\times$ 2 owning/not a house), predicting the difference between the counteroffer and the asking price. Planned contrast analysis revealed that among participants who owned a house adjustments were larger when the asking price was round, compared to precise, $p < .001$. However, participants in the precise to the thousands condition adjusted away similarly to those in the precise to the hundreds condition, $p = .192$. Among participants who did not own a house there was no difference between the round and precise conditions, $p = .336$. There was a difference between precise to the hundreds and precise to the thousands condition, $p < .001$.

Household income. Participants selected one of 12 annual household income categories: (1) below 10,000; (2) between 10,000 and 19,999; (3) between 20,000 and 29,999; (4) between 30,000 and 39,999; (5) between 40,000 and 49,999; (6) between 50,000 and 59,999; (7) between 60,000 and 69,999; (8) between 70,000 and 79,999; (9) between 80,000 and 89,999; (10) between 90,000 and 99,999; (11) between 99,999 and 149,999; and (12) above 150,000. The most frequent (15.42%) household income category that was chosen was “between 30,000 and 39,000” and the least frequent category (2.66%) was “above 150,000”. Due to the many categories we treated household income as a continuous measure and conducted a 3 (type of asking price: round vs. precise to the hundreds vs. precise to the thousands) by household income (as a continuous measure) ANCOVA. Results revealed a main effect for asking price condition $F(2, 895) = 7.15, p = .001, \eta^2 = .016$. The main effect for household income was significant, $F(1, 895) = 5.65, p = .018, \eta^2 = .006$. A trend showed that the higher the household income, the less participants adjusted away from the asking price (in absolute terms), $r = -.058, p = .080$. The two way interaction between asking price and household income was not significant, $p = .059$.

Familiarity with the price precision effect. Only 8 participants (0.88%) indicated they were familiar with the findings obtained in Janiszewski & Uy (2008). The small number of participants per cell did not allow analyzing the data further.

Additional factors. Overall, 13 (1.4%) participants indicated they are in the process of selling a house (with the minority, $n = 5, 38.5\%$, using real-estate agents). A total of 56 participants (6.2%) indicated they are in the process of buying a house (with the minority, $n = 26, 46.4\%$, using real-estate agents). Lastly, 17 participants (1.9%) indicated they are or were real-estate agents. Due to the small number of participants in each cell we could not analyze the robustness of the results across these factors.