

VALUE TRUST

finexpert  
German Takeover Report 2022

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Volume 8

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## Preface

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Dear finexpert members,

We proudly present the 2022 issue of the finexpert German takeover report. It covers all takeover offers and delisting tender offers of the year 2021 according to the German takeover code WpÜG and provides extensive information on relevant variables like bid types, premia offered, market reaction of target's and (if available) on bidder's stock prices. In addition, our extensive database allows to compare last year's figures of these variables against the moving average of the preceding years and thus to highlight trends and long term developments. Finally, the finexpert German takeover report contains a unique and extensive analysis of fairness opinions and statements of management and supervisory board of the target company (§27 WpÜG), allowing for a detailed analysis of the relationship of these factors upon target stock price reaction and success rates of the takeover bid. Along with the "traditional" success definitions of takeover offers, we analyse an alternative success measure that takes potential bidder toeholds into account.

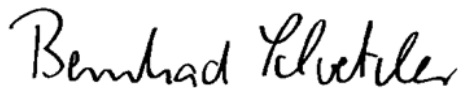
We have seen a record year in public M&A activity in 2021: After the recovery from the Covid19 shock in 2020 numbers and volume of public takeover offers covered by this report reached an all-time high.

This report contains a detailed description of the takeover offer of Vonovia SE for Deutsche Wohnen SE from May 2021.

Finexpert members have free access to download this (and all other) finexpert reports from our website [www.finexpert.info](http://www.finexpert.info). We hope that the information provided in this report is helpful in your day to day business.



Best regards,



Prof. Dr. Bernhard Schwetzler,  
Chair of Financial Management  
HHL - Leipzig Graduate School of Management

## People

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## Market Overview

2021 was marked by a bustling German M&A market. Following a slight decline in the number of takeover bids in 2020 the total figure of 2021 surpasses all previous values in the period under review from 2014 to 2021. The number of primary takeover bids<sup>1</sup> increased by 5% (+1) above the pre-year figure. Nevertheless it remains below the pre-pandemic figure of 2019. In 2021, 14 delisting tender offers<sup>2</sup> were made which is by far the highest amount since 2016. Due to its special nature, we will treat this type of offer as a separate category of public offers. In total, 33 delisting offers were published since the regulation amendment in 2015 which set a requirement of an offer document prior delisting application. Figure 1 shows the development of all offers from 2014 to 2021.

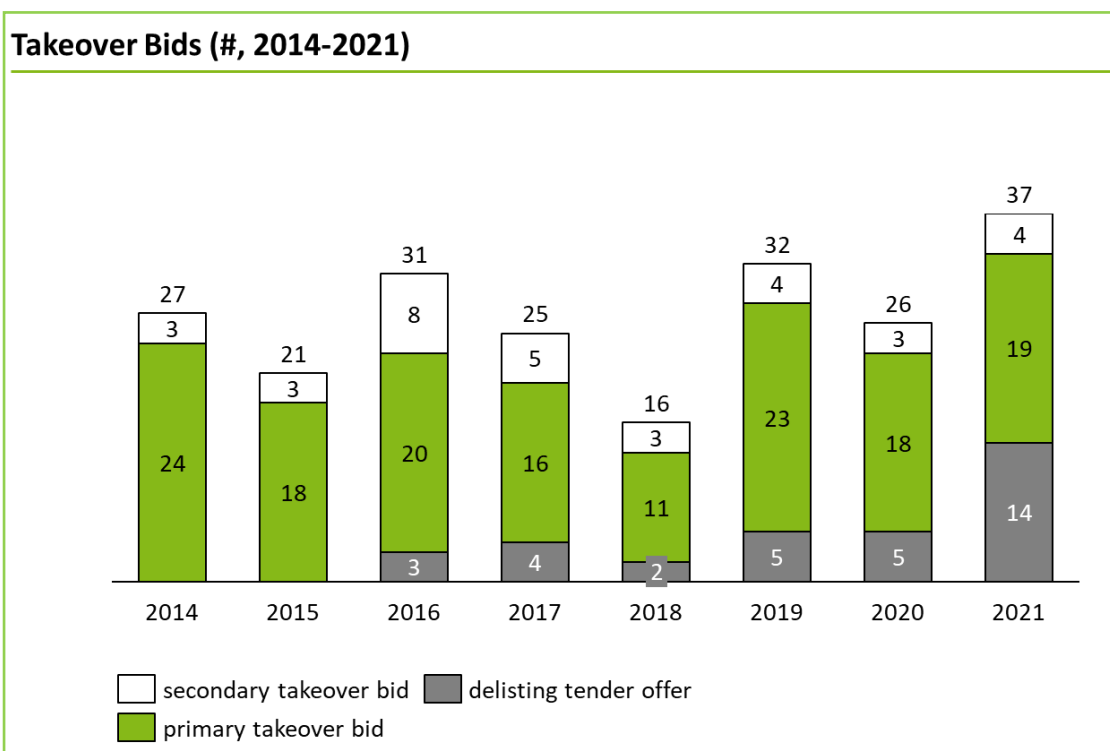


Figure 1: Takeover Bids (#, 2014-2021)

<sup>1</sup> A primary takeover bid denotes the initial offer, while a secondary takeover bid refers to a change of the previous offer (e.g. increase of acquisition premium, extension of deadlines).

<sup>2</sup> A delisting tender offer is a voluntary public compensation offer as a legal requirement for a withdrawal of the admission to trading of the shares on a regulated market.

## Market Overview

In the year 2021, the volume of primary takeover bids and delisting tender offers totaled EUR 55.12bn. It increased by 129% in comparison to the previous year. Both the volume of primary takeover offers and of delisting tender offers contribute to this. In addition, the average volume of primary takeover bids increased by 137% (EUR 1.6bn/bid). This development breaks the negative trend that has been observed since the peak in 2017. The highest volume offer in 2021 (EUR 15.3bn) was from Vonovia SE for the target company Deutsche Wohnen SE. After two changes to the offer in the course of which the bid price was increased and the minimum acceptance threshold was reduced at the third attempt Vonovia was able to successfully complete the offer. The second largest offer in 2021 had a total bid volume of EUR 6.7bn, and was published near year end by Faurecia Participations GmbH for the acquisition of the shares of HELLA GmbH & Co. KGaA. The volume of delisting offers in 2021 was in the medium range (especially, considering that the high average volume in 2018 was mainly driven by a delisting offer for STADA Arzneimittel AG shares of EUR 5.1bn). The largest delisting tender offer in 2021 was for OSRAM Licht AG with a bid volume of EUR 1.4bn.

Figure 2 depicts the development of the bid volumes between 2014 and 2021.

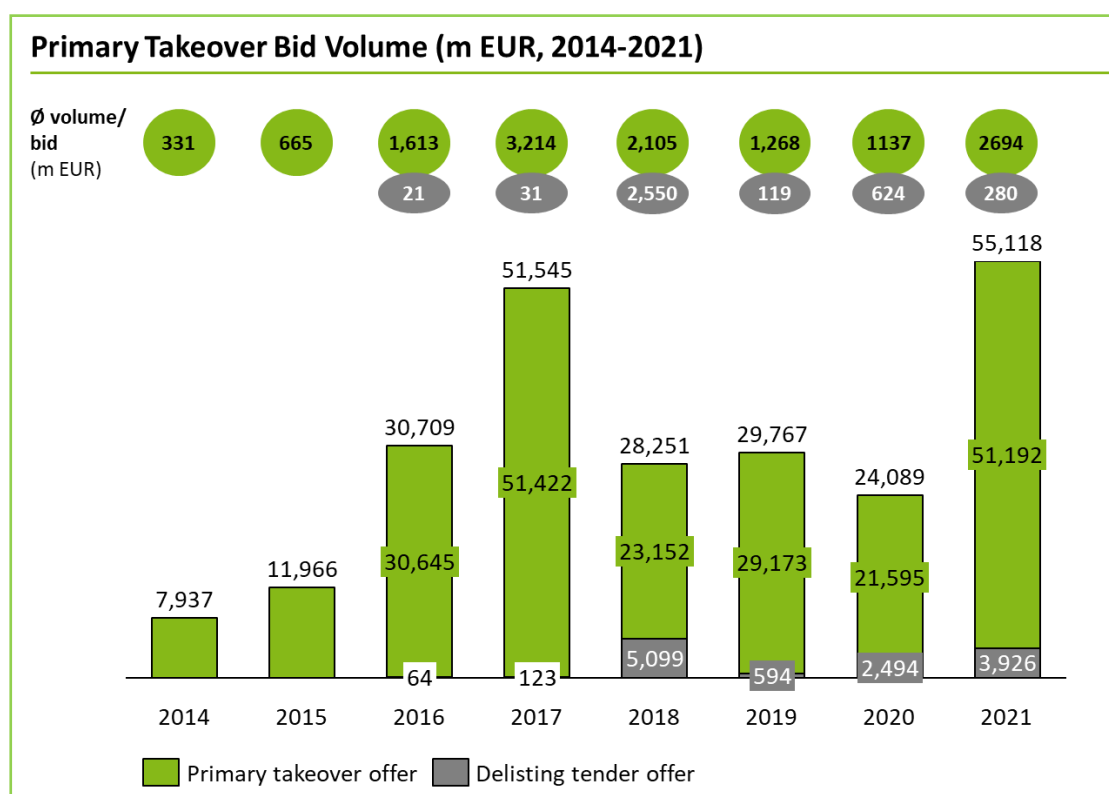


Figure 2: Primary Takeover Bid Volume (m EUR, 2014-2021)

## Market Overview

When differentiating between financial and strategic investors as bidders, we find that the total numbers of offers are in the same range for both. 42% of primary takeover bids were made by financial investors. The average volume of strategic bids exceeds the volume of bids made by financial investors significantly (EUR 3,583m vs. EUR 1,473m). Further, the share of bids by foreign investors remains on a high level: 88% of financial investors and 55% of strategic investors were foreign in 2021.

Figure 3 presents the distribution of primary takeover bids by the type and origin of investor over the last five years. Strategic investors held responsible for 57% of all primary takeover bids representing 77% of the total bid volume. Again we set apart the delisting tender offers.

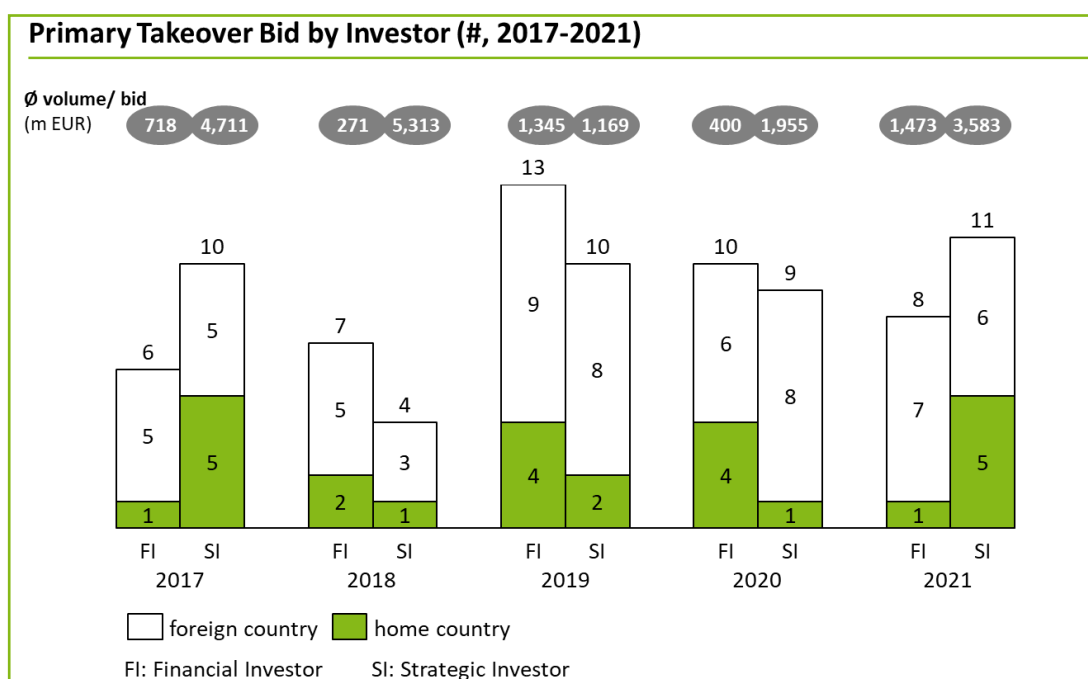


Figure 3: Primary Takeover Bid by Investor (#, 2017-2021) w/o delisting offers

## Market Overview

Figure 4 depicts separately a distribution for delisting tender offers differentiating between financial and strategic bidders. The average volume of delisting offers made in 2021 by financial investors amounts to 40% of the volume of offers made by strategic investors. Strategic investors launched the majority of the delisting offers in 2021. At the same time, foreign investors were responsible for 79% of the offers.

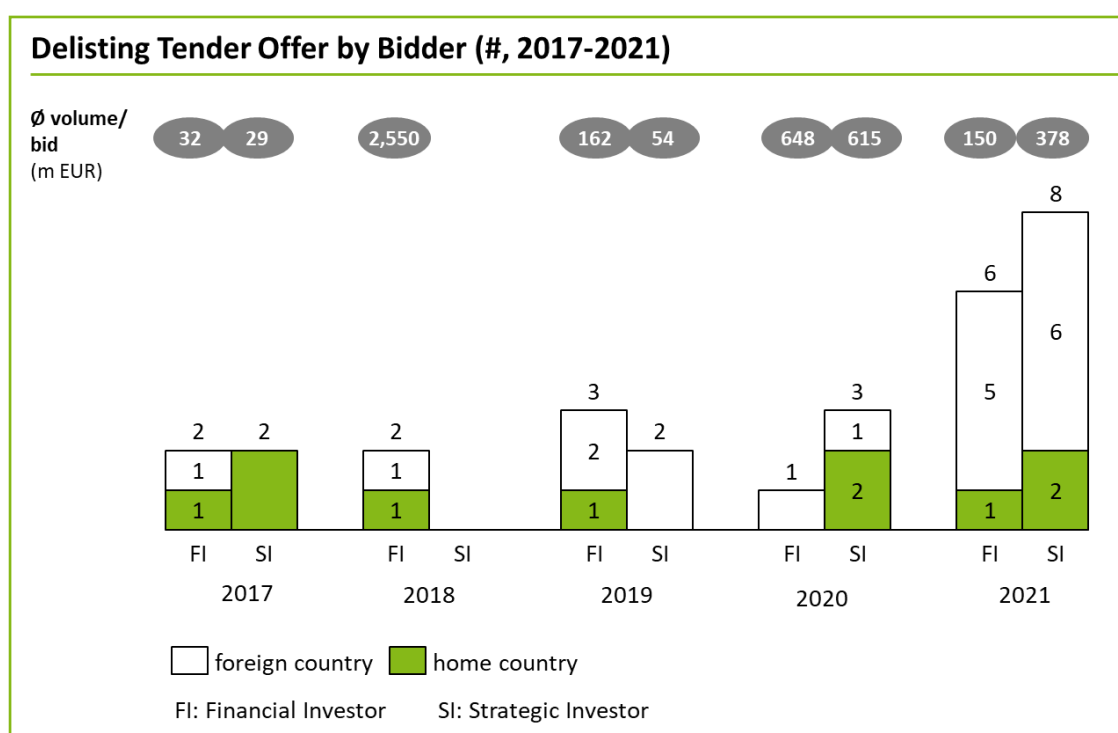


Figure 4: Delisting Tender Offer by Bidder (#, 2017-2021)

## Market Overview

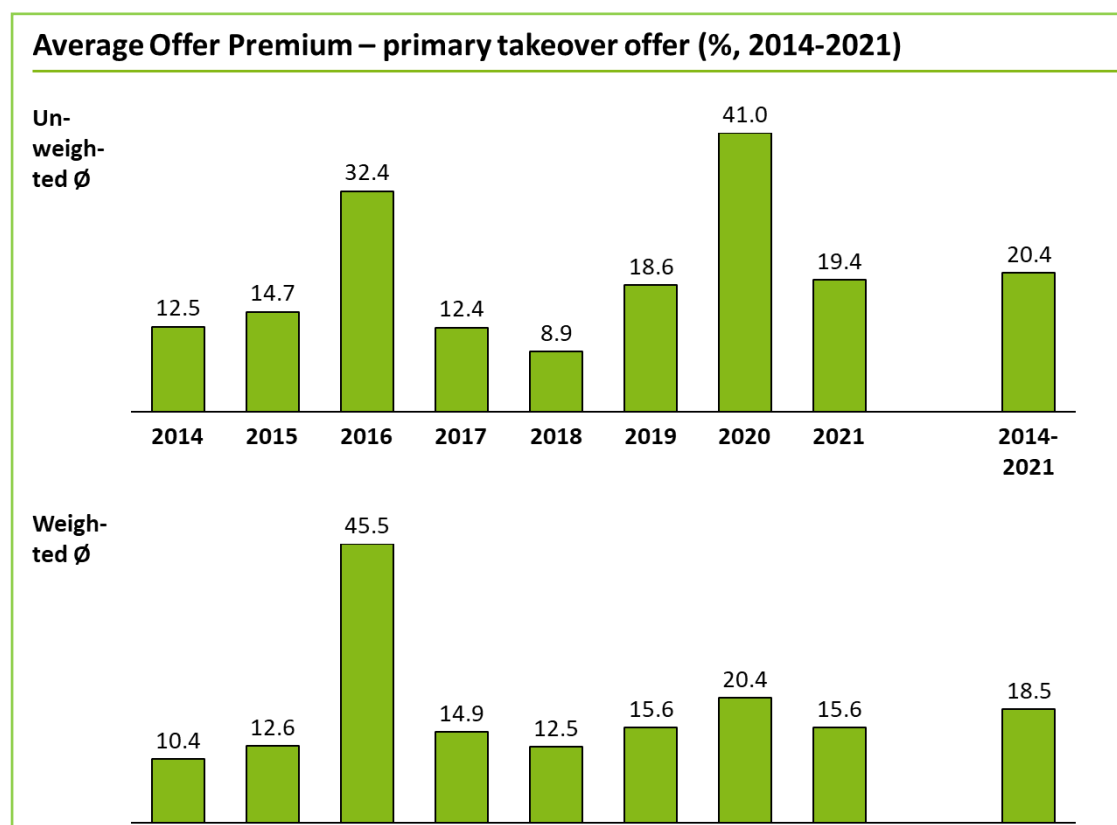


Figure 5: Average Offer Premium (% , 2014-2021)<sup>3</sup>

The bid premiums offered, both weighted<sup>4</sup> and unweighted, have been significantly lower than in the previous year. After the 2020 steep incline fueled by the sharp drop in stock prices in 2020 due to Covid19 premia got back to earlier levels. We define the bid premium as the mark-up of the bid price compared to the three-month average stock price of the target firm prior to the announcement of the bid. This definition is in accordance with the WpÜG.<sup>5</sup> The average weighted offer premium of 15.6% was 4.8%-pts. lower than in 2020. The unweighted one decreased even to 19.4% (+21.6%-pts.). Driven by extremely high values in 2016 and 2020, the average offer premium for 2014-2021 period remains comparably large in weighted and unweighted terms (20.4% and 18.5% resp.).

<sup>3</sup> The values reported for 2016-2018 slightly diverge from those reported in Takeover Report 2019 due to exclusion of delisting tender offers from this overview.

<sup>4</sup> Weighted bid premiums account for the takeover value (outstanding shares not owned by the bidder times the bid price), i.e. bids with a higher takeover value are assigned a higher weight.

<sup>5</sup> The three-month average stock price prior to the bid is the minimum required bid price defined by the WpÜG and, thus, the basis for premium calculation. If the three-month average stock price is not available or not reliable, the highest price of preemptions is taken or a valuation by an independent third party in accordance with § 5 para. 4 WpÜG-AV is done.



## Market Overview

Looking at the offer premiums in clustered intervals of 5% reveals that more than 66% of all delisting tender offers in 2021 offered a premium between 0% and 5%. Further, primary takeover bids did not include any premium in 11% of the cases and a premium below 5% in 17% of the offers. The zero-premium bids are generally made when the offer is mandatory (i.e. required to be made by the WpÜG), and when the target company is financially constrained or distressed. There was one takeover offer with an exceptionally high premium in 2021: The voluntary takeover offer by Zorro Bidco S.à r.l. for zooplus AG entailed a premium of 76% which even increased to 80% in the second round. Later that year Zorro Bidco S.à r.l. was able to gain a 97% share in a successful delisting tender offer.

By and large, the offer premiums cumulated for the last 8 years are distributed similarly with a large proportion the range from 0-5%. Figure 6 displays the distribution of offer premiums for 2021 and cumulated for the years 2014 to 2021.

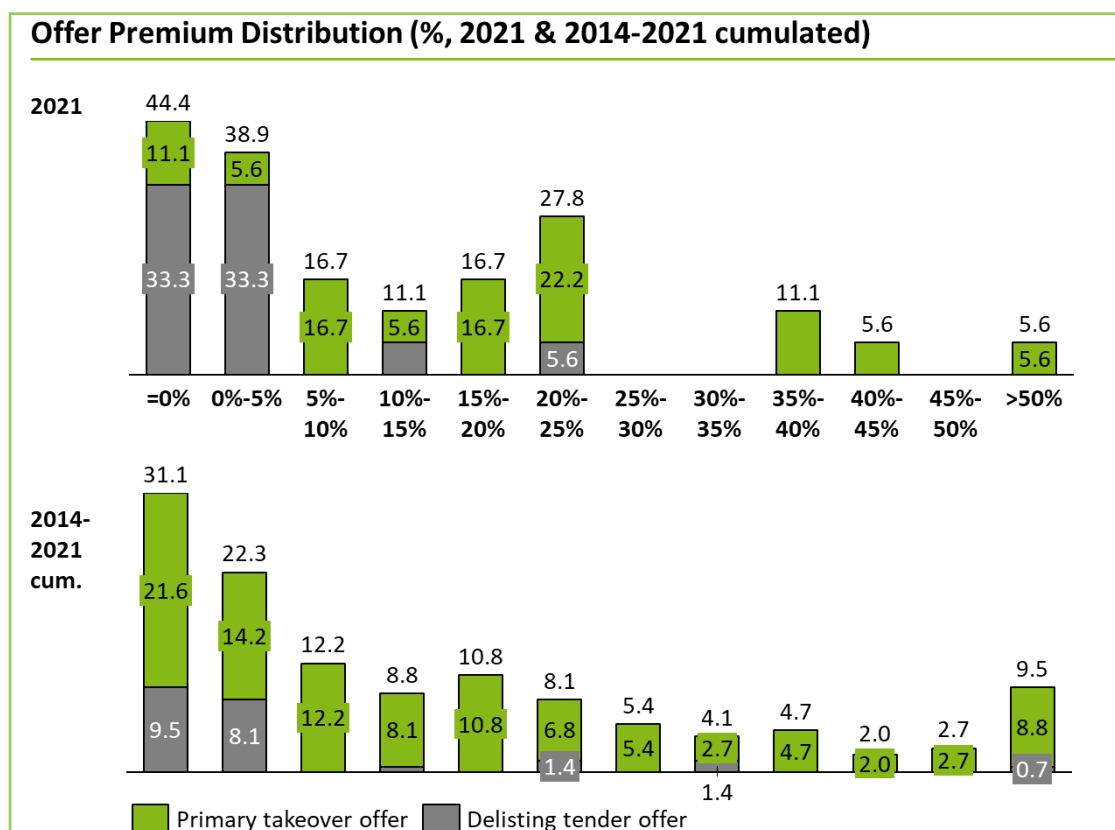


Figure 6: Offer Premium Distribution (% , 2021 & 2014-2021 cumulated)

## Market Overview

The German takeover code defines an ownership stake above 30% as the threshold for having (or getting) control over a company. As we are especially interested in properties of control-taking offers, figure 7 below shows the distribution over the premiums for offers made from a bidder with a toehold below 30% ownership of the target company.

### Offer Premium Distribution (% , 2021 & 2014-2021 cumulated), <Toehold 30 %

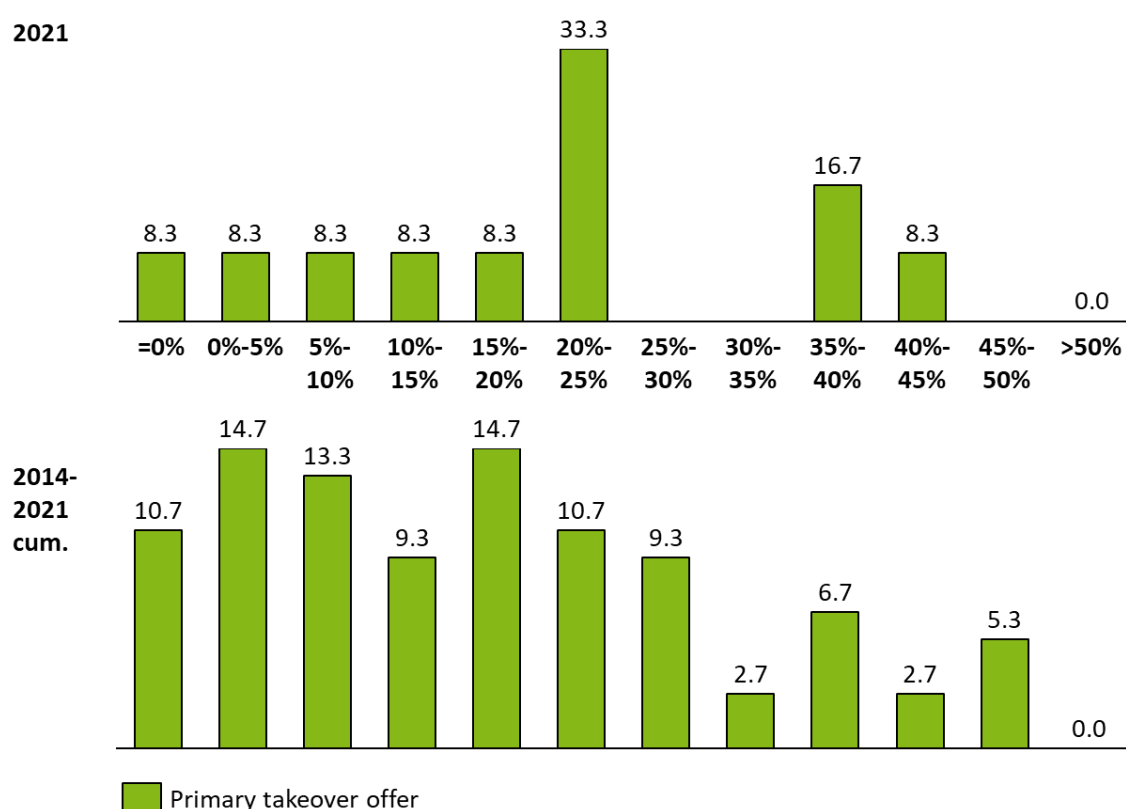


Figure 7: Offer Premium Distribution (% , 2021 & 2014-2021 cumulated; toehold <30%)

A differentiated view on strategic and financial investors shows a comparatively large discrepancy in 2021. In stark contrast to the previous year, financial investors in 2021 paid considerably higher premiums than strategic investors. The annual average premium by financial investors in 2021 comprised 30.8%, and therefore ranged closely to the previous year's level. The annual average premium paid by strategic investors declined sharply to 11.1% (-80%). Examining weighted offer premiums by investor type provides us with similar results: premiums paid by financial investors in 2021 surpass the premiums for strategic investors' bids significantly (not reported: 31.2% vs. 11.6%). The five years average values of weighted offer premiums draw a different picture by showing not much difference between the investor types (2017-2021: 18.98% vs. 14.55%).

## Market Overview

Figure 8 provides the average unweighted offer premiums by investor type over the last 5 years.

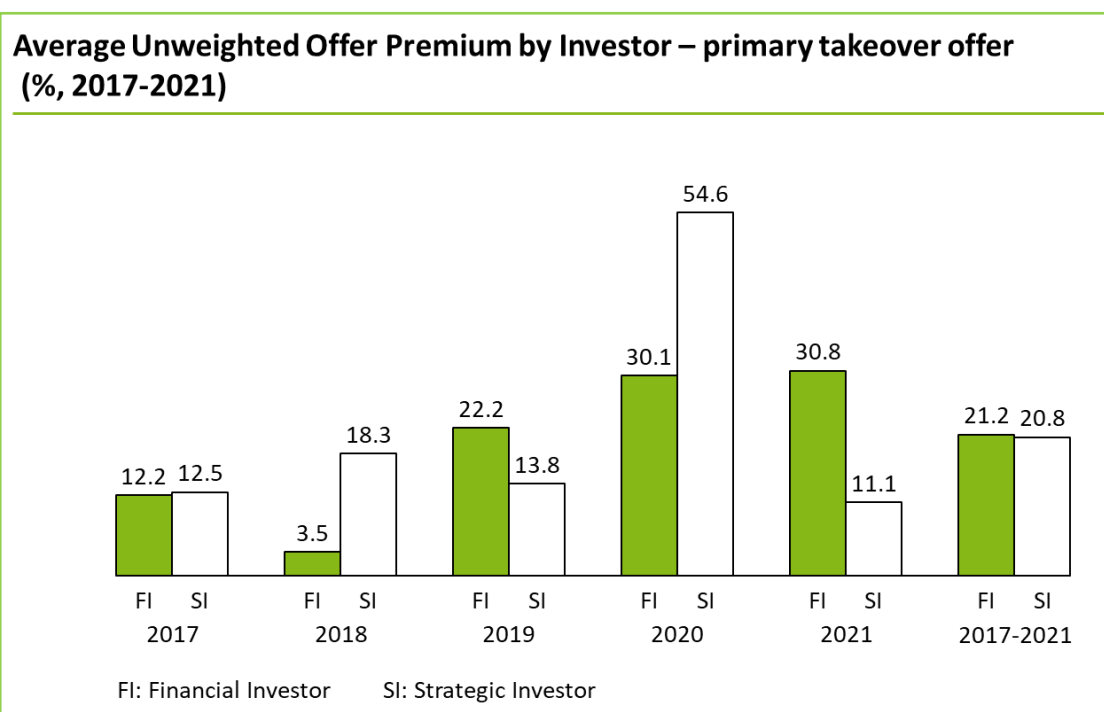


Figure 8: Average Unweighted Offer Premium by Investor (% , 2017-2021)<sup>6</sup>

As in previous years, takeover offers are most frequently proposed with cash as the method of payment. The proportion of cash payment in primary tender offers amounts to 94.7% in the 2021 bids. In the remaining 5.3% of the cases the consideration provided by the offeror was in form of own shares. This fraction is entirely due to the bid of Acorn HoldCo, Inc. for ADVA Optical Networking SE. No acquisition offer in 2021 was made in return for a combination of cash and shares.

<sup>6</sup> Delisting tender offers are excluded from this overview.

## Market Overview

Figure 9 depicts the overview of the annual distribution of different payment methods with respect to all takeover bids in the previous five years.

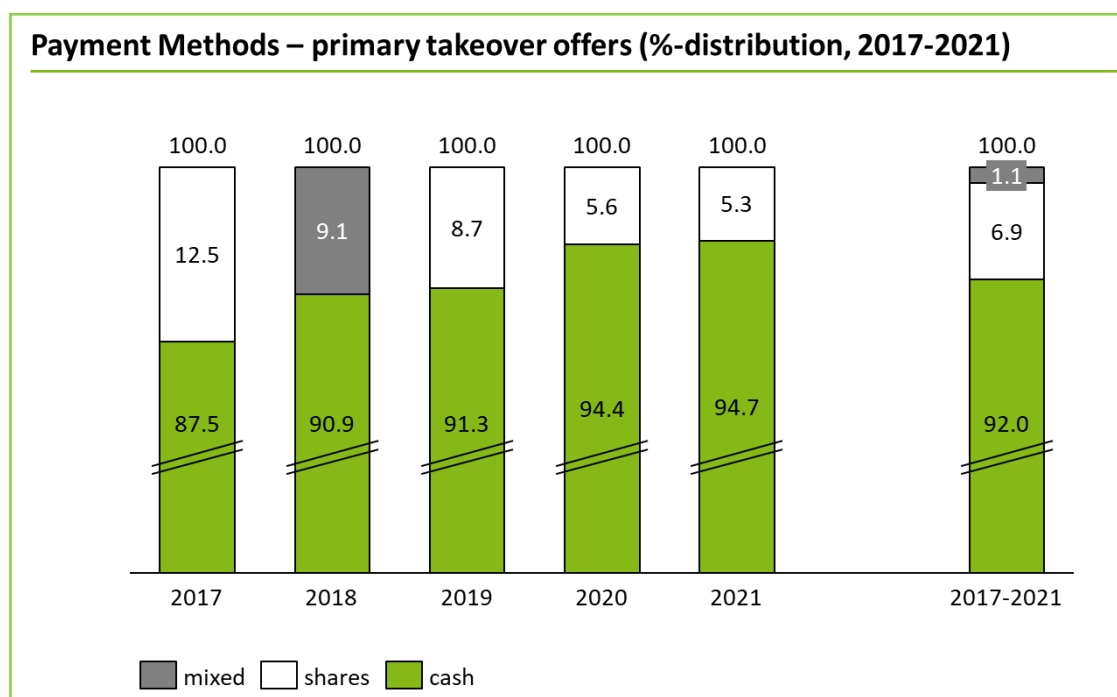


Figure 9: Payment Methods (%-distribution, 2017-2021)

## Capital Market Reaction

To evaluate the capital market reaction on the offers, we calculated the cumulated abnormal returns (CARs) for bidder and target companies around the day of offer publication. We concentrate on **primary** bids where the bidder owns less than 75% of the target before the bid. As a 75% majority allows the majority shareholder to sign a domination agreement with the corporation, we assume the bidder having full control over the company in this case. As we are interested in the premium of control taking offers we exclude offers made with an ownership stake of the bidder above 75%. We calculate CARs for two different event windows: -1 to +1 days and -7 to +7 days around the day of offer publication. DAX Prime All Share index is used as a benchmark for the calculation of CARs, as this index is domestic, broad and the listed companies comply with the highest level of reporting requirements of Deutsche Börse AG.

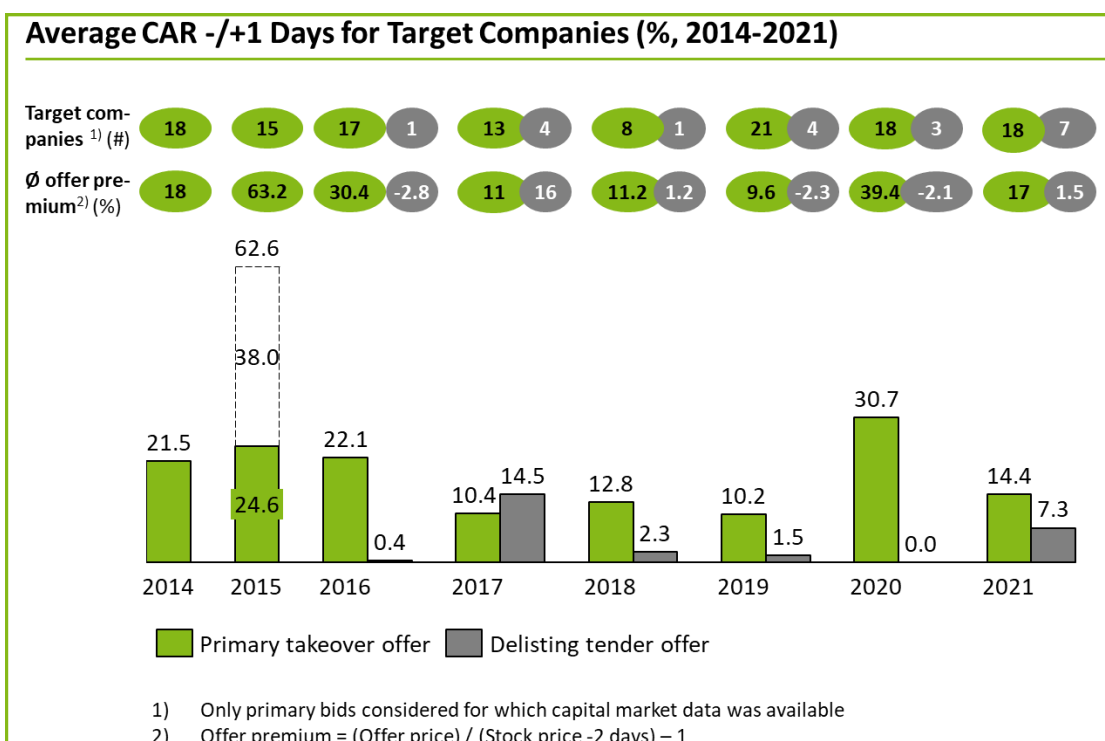


Figure 10: Average cumulated abnormal return -/+1 days for target companies (% , 2014-2021)<sup>7,8,9</sup>

<sup>7</sup>The market reactions in 2015 contain one exceptional case: When Livia Corporate Development Group SE submitted a bid of EUR 13.49 per share (highest price of preemptions) to the owners of the insolvent Softmatic AG, the share price spiked up from EUR 2.43 (-1 day) to EUR 12.50 (+1 day). The dotted boxes in figure 10 and 11 highlight the effect.

<sup>8</sup>The difference of the displayed takeover offers in 2020 to the total amount of 19 takeover offer appears because ADO Properties S.A. had 97% of the shares of the target company under control before the start of the offer period.

<sup>9</sup>The extraordinarily high CAR value for targets of delisting tender offers in 2017 is driven by one case. The price of Viton Wireless Technology was trading around EUR 0.3 until the date of the offer announcement when it adjusted to the offer price of EUR 0.53.

## Capital Market Reaction

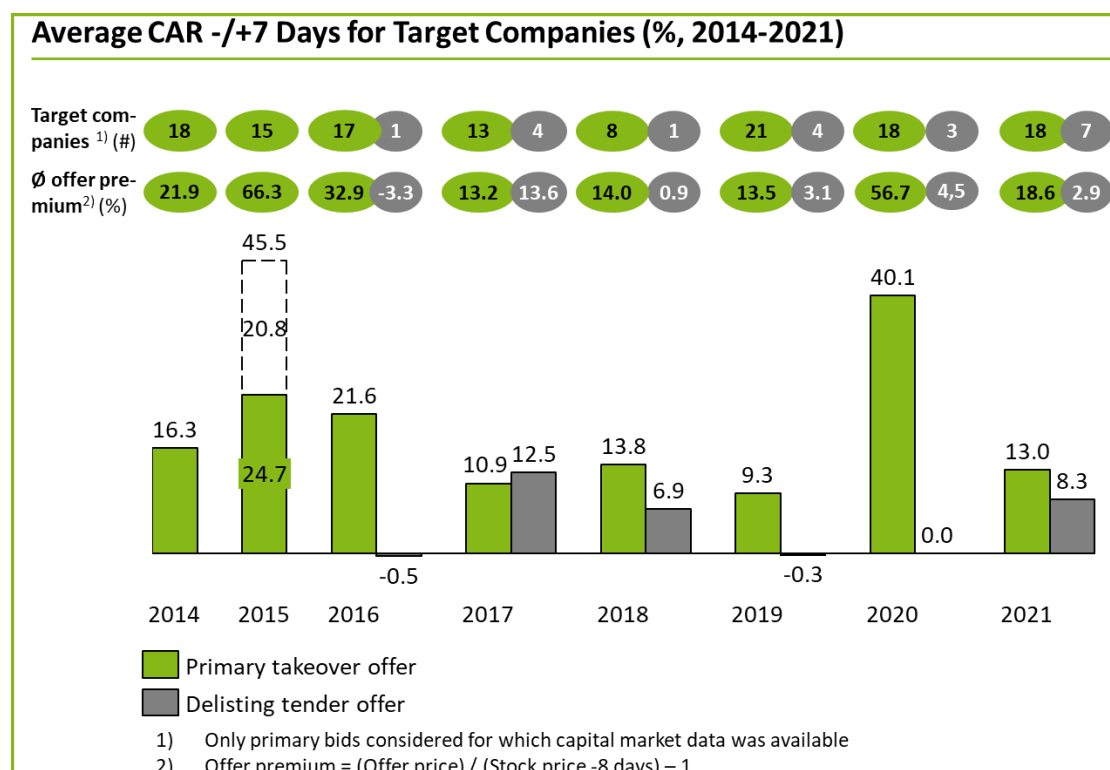


Figure 11: Average cumulated abnormal return -/+7 days for target companies (% , 2014-2021)

For the target companies, we find the average CARs to be positive throughout all years and closely related to the average offer premiums. For this analysis, offer premiums are calculated based on the last observable stock price before beginning of the event window. In contrast to other takeover offers, the average CAR and premium in delisting offers are generally low or even negative. The two figures above display medium range average CAR values for the companies targeted by primary takeover offers in 2021, whereas the CAR values for targets of delisting tender offers were relatively high.

For the bidding firms we find different results: we do not find a significant capital market reaction at the offer announcement, neither over the entire range nor on an annual analysis. Due to the low number of listed bidder companies, the obtained results are also below a statistical meaningful level of confidence (see figures 12 and 13).

## Capital Market Reaction

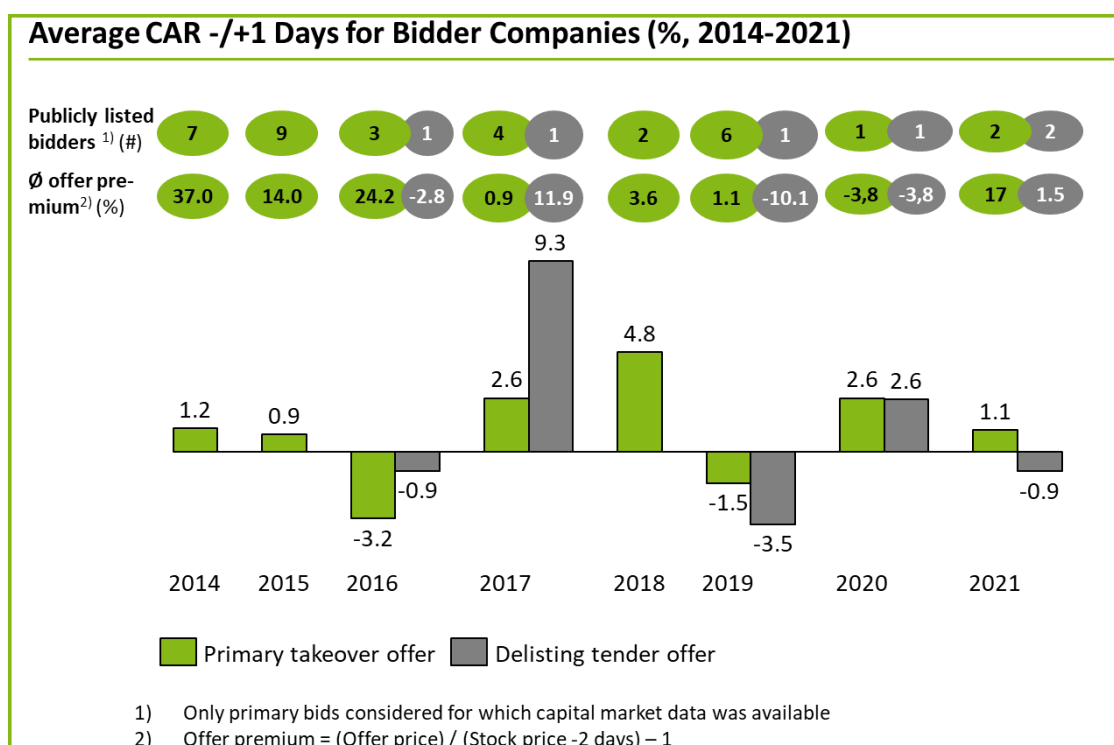


Figure 12: Average cumulated abnormal return -/+1 days for bidder companies (% , 2014-2021)

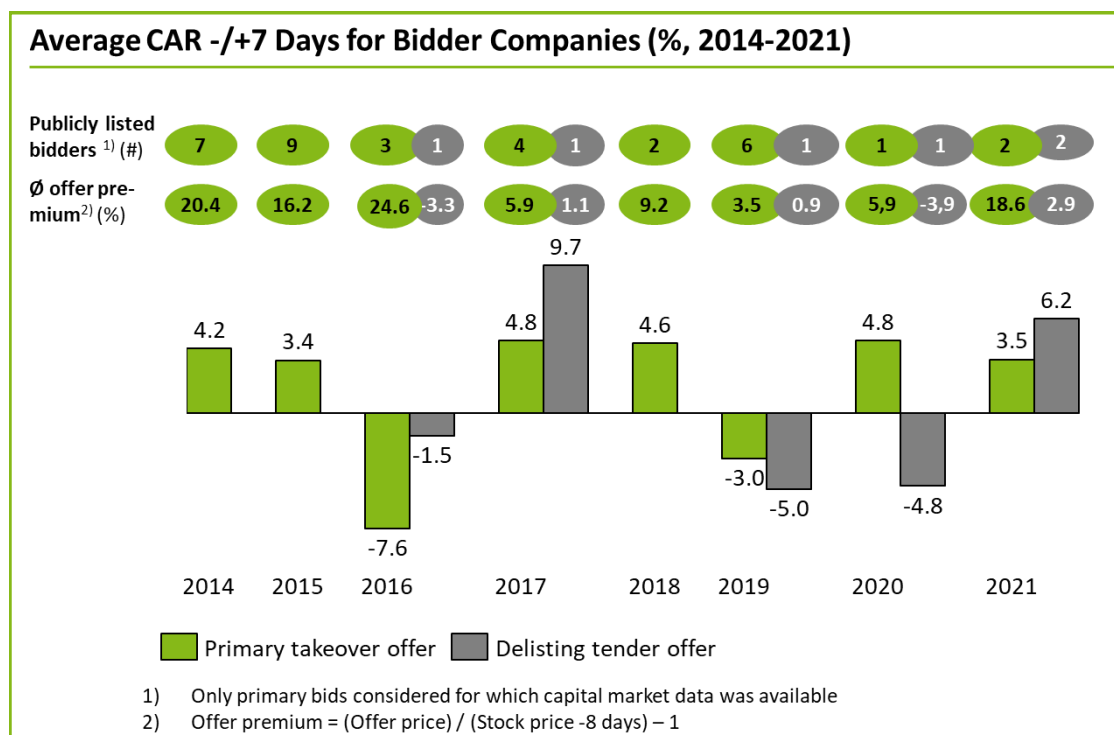


Figure 13: Average cumulated abnormal return -/+7 days for bidder companies (% , 2014-2021)

## Capital Market Reaction

Finally, we plot the individual offer premiums against target CARs for the event window of  $-1/+1$  day. We find a strong positive relationship shown in figure 14 (Correlation coefficient is equal to 85,87%).

Such an analysis gives insights into the market expectation on the success of the bid and is interpreted as follows: If the target CAR stays behind the offer premium, the market attaches a low probability to a successful execution of the deal. Contrary, if the target CAR is significantly above the offer premium, the capital market expects an improved offer. When target CAR and offer premium are in line, then there is a significant probability for the original bid's success.

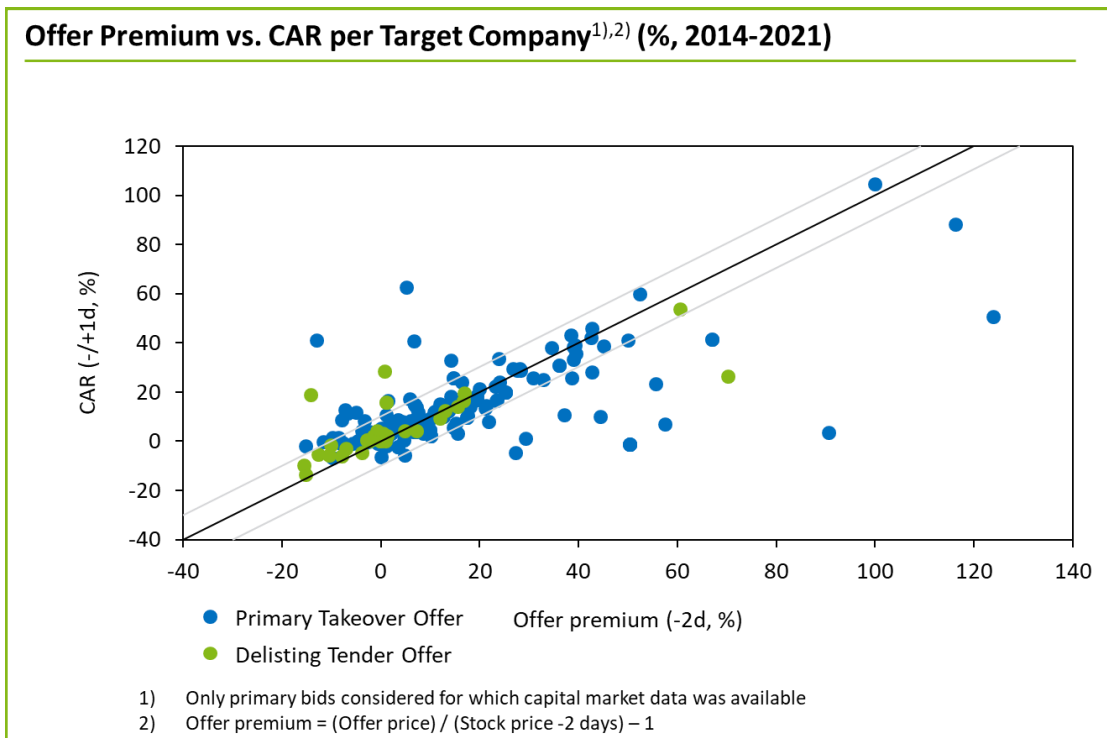


Figure 14: Offer premium vs. cumulated abnormal return per target company (% , 2014-2021)



## Statements & Fairness Opinions

Both the supervisory board and the executive board of the target company are, according to §27 WpÜG, required to issue an opinion statement regarding the adequacy of the takeover bid. Over the last years more and more target companies additionally requested a Fairness Opinion by a third party to evaluate the offer's adequacy. The target company's statements as well as the Fairness Opinion are important tools for the communication between management and shareholders of the target company and influence the takeover bid's success. The supervisory and the executive board usually issue a joint statement (2017-2021: 97.3% of all statements). Over the last years we usually observed joint statements. In 2020 however, one takeover bid has separate statements by the supervisory board and the executive board. In 2021, there was again one offer concerning which the executive board issued an individual statement.

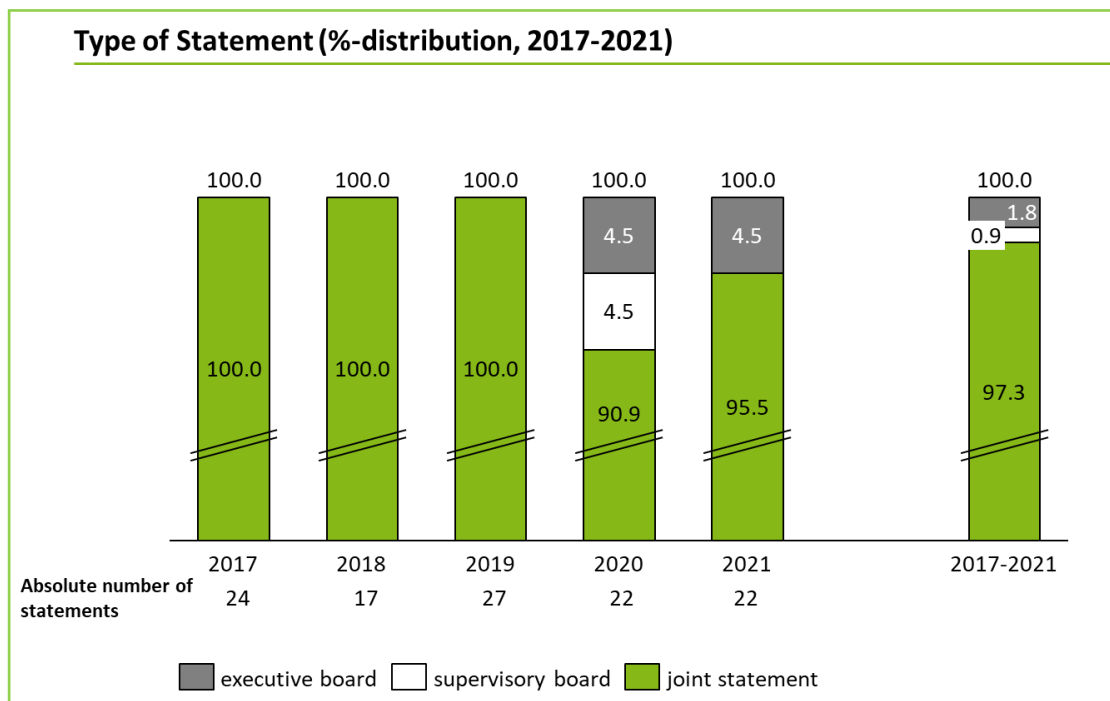


Figure 15: Type of Statement (%-distribution, 2017-2021)

## Statements & Fairness Opinions

§27 WpÜG requires the opinion statement to contain a recommendation to the shareholders whether to accept or reject the takeover bid. The supervisory and executive board's statements between 2017 and 2021 have given a distinct suggestion in 82.1% of all cases: 59.8% advised the shareholders to accept the offer, whereas 22.3% recommended a rejection. No recommendation was given in 17.9% of all cases. Analogously to the previous year, the share of statements without a recommendation declined in 2021: for 13.6% of all bids the statements did not advance an opinion towards the acceptance or rejection of the offer. The majority of the given recommendations in 2021 was to accept the offer.

The opinion statements to delisting tender offers recommend an acceptance of the offer in 57% cases. No recommendation was given for 36% of the cases whereas for the remaining cases of delisting offers the recommendation was to reject the offer.

Figure 16 shows the development of the statement's recommendation for the takeover bids over the past 5 years.

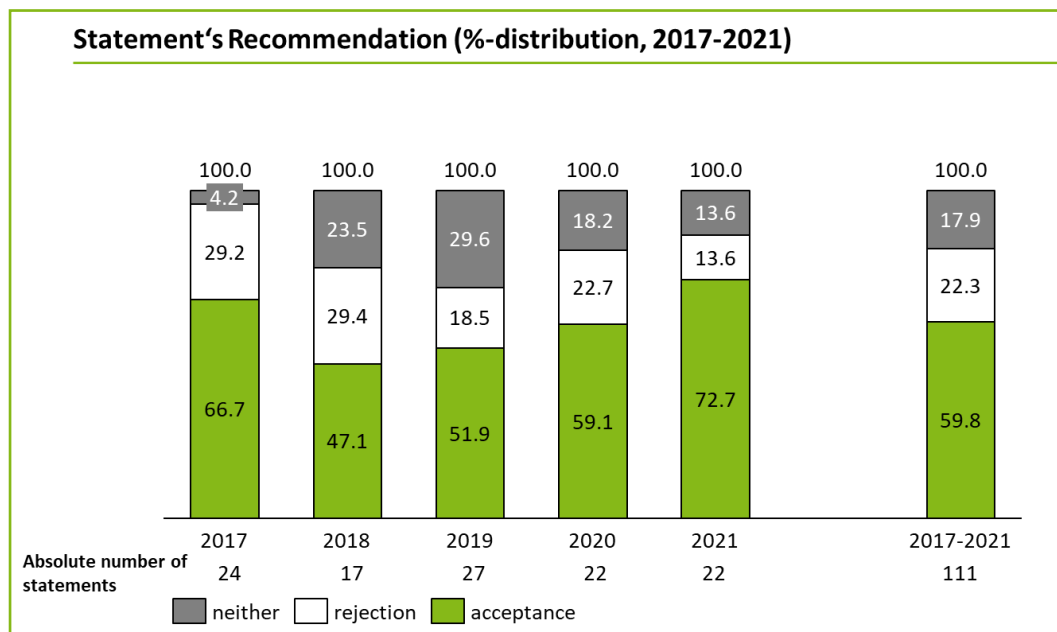


Figure 16: Statement's Recommendation (%-distribution, 2017-2021)<sup>10</sup>

<sup>10</sup> Delisting tender offers are excluded from this overview.

## Statements & Fairness Opinions

A Fairness Opinion is an external expert's statement regarding the adequacy of a takeover bid or of another company transaction. Investment banks or financial advisers consulting the management regarding the transaction in question usually issue these Fairness Opinions. In Germany the target companies usually obtain a Fairness Opinion for legal coverage and as an independent third party opinion. The Fairness Opinion's content and requirements are not regulated by law. DVFA<sup>11</sup> and IDW<sup>12</sup> published guidelines concerning content, publication and the handling of conflicts of interest in a Fairness Opinion. In 2021, the adequacy of 78.3% of the takeover bids were assessed by the external experts providing Fairness Opinions. For 7 takeover offers the Fairness Opinion was requested from more than one external expert. Over the past 5 years 77.4% of the target company's statements to takeover offers were complemented by Fairness Opinions. Figure 17 shows the development since 2014 excluding delisting tender offers.

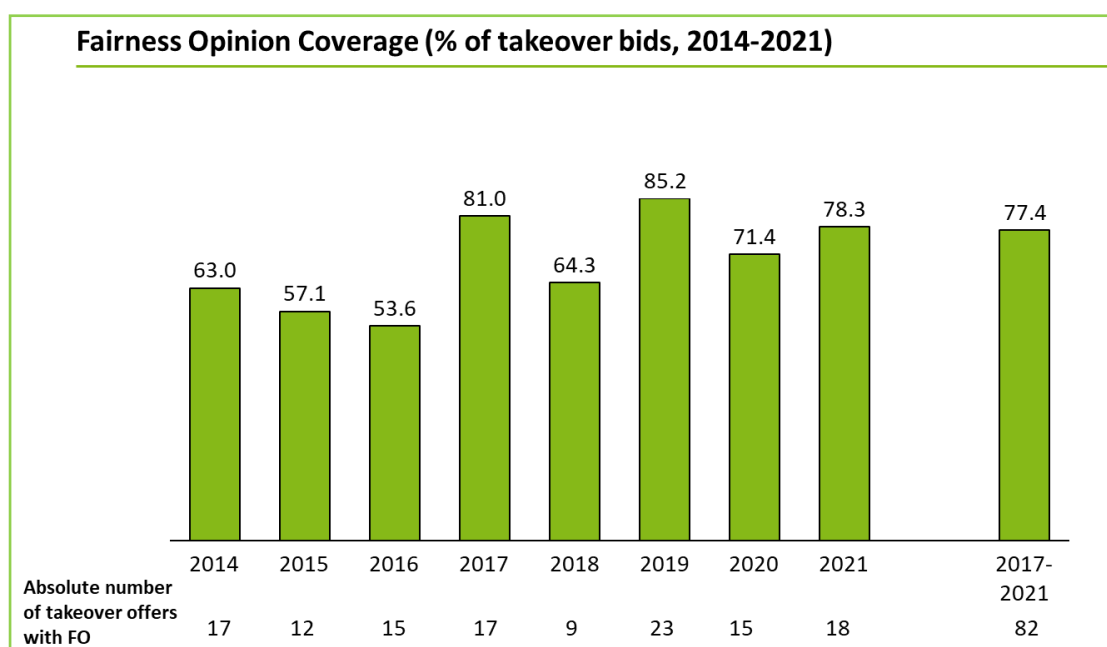


Figure 17: Fairness Opinion Coverage (% of takeover bids, 2014-2021)<sup>13</sup>

<sup>11</sup> DVFA Expert Group „Fairness Opinions“, The principles of compiling a Fairness Opinions, available online at [http://www.dvfa.de/files/die\\_dvfa/kommissionen/application/pdf/grundsaeetze\\_fairness\\_opinions.pdf](http://www.dvfa.de/files/die_dvfa/kommissionen/application/pdf/grundsaeetze_fairness_opinions.pdf)

<sup>12</sup> IDW S8 “Grundsätze für die Erstellung von Fairness Opinions”

<sup>13</sup> The figures for the year 2020 slightly diverge from the numbers quoted in our last report. This is due to the reclassification of one takeover bid as delisting tender offer. Additionally, one offer which was announced in 2020 entered the second round in January 2021 which also counts to 2020.

## Statements & Fairness Opinions

The Fairness Opinions were issued for 50% of delisting offers in 2021. Correspondingly, since 2017 the compensation adequacy for only 33.3% of delisting offers was assessed by an external Fairness Opinion.

In 2021, 18.8% of all Fairness Opinions claimed the bidder's takeover offer to be inappropriate. The assessment of distribution over the Fairness Opinion's published judgment of all takeover offer's adequacy in 2017-2021 comes to a similar result: 68.8% of the evaluated takeover bids were considered adequate.

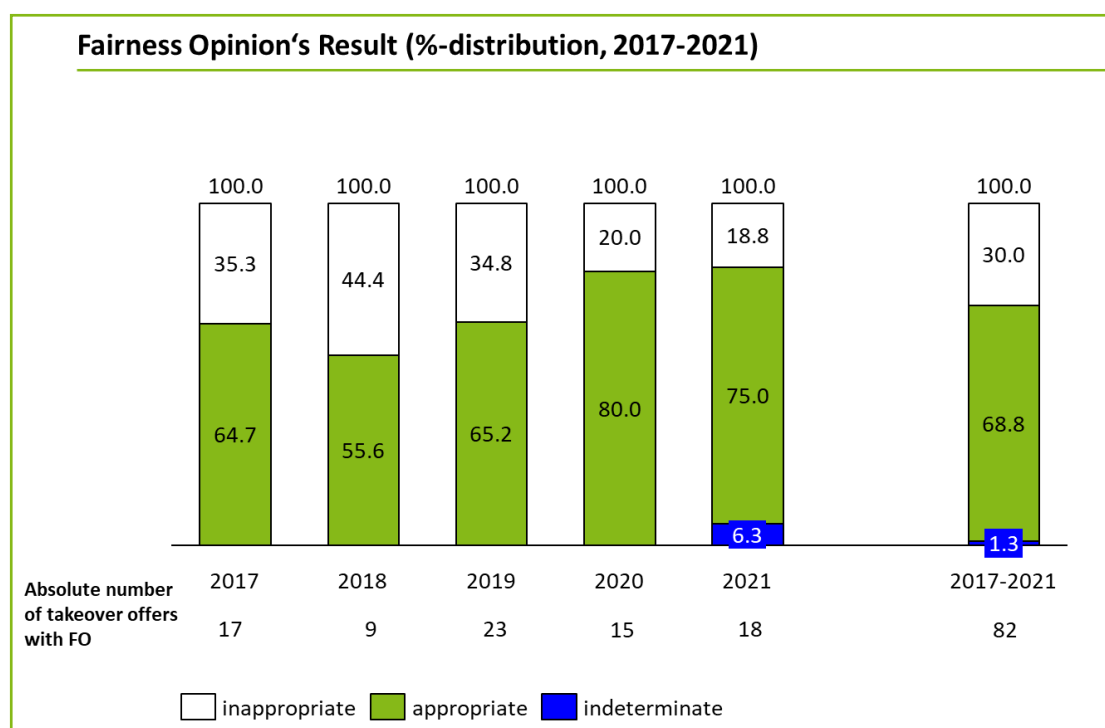


Figure 18: Fairness Opinion's Result (%-distribution, 2017-2021)

## Statements & Fairness Opinions

The Fairness Opinion's result is usually in agreement with the recommendations of the target company statements as can be seen in Figure 19. In the vast majority of the cases in 2021, we observe a consensus between Fairness Opinion's and statement's recommendations (89.3%). In recent years, we observed an increasing number of cases where the supervisory board and executive board gave no recommendation to the shareholders whether to reject or accept the bid. This explained the higher share of divergence between statement and Fairness Opinion. For two of the takeover offers for which the Fairness Opinions denied the appropriateness the target's management expressed the same position while in the third case it did not give an explicit recommendation. For three offers, for which the management and supervisory board expressed their opposition against the offer the Fairness Opinion did not dissent this statement.

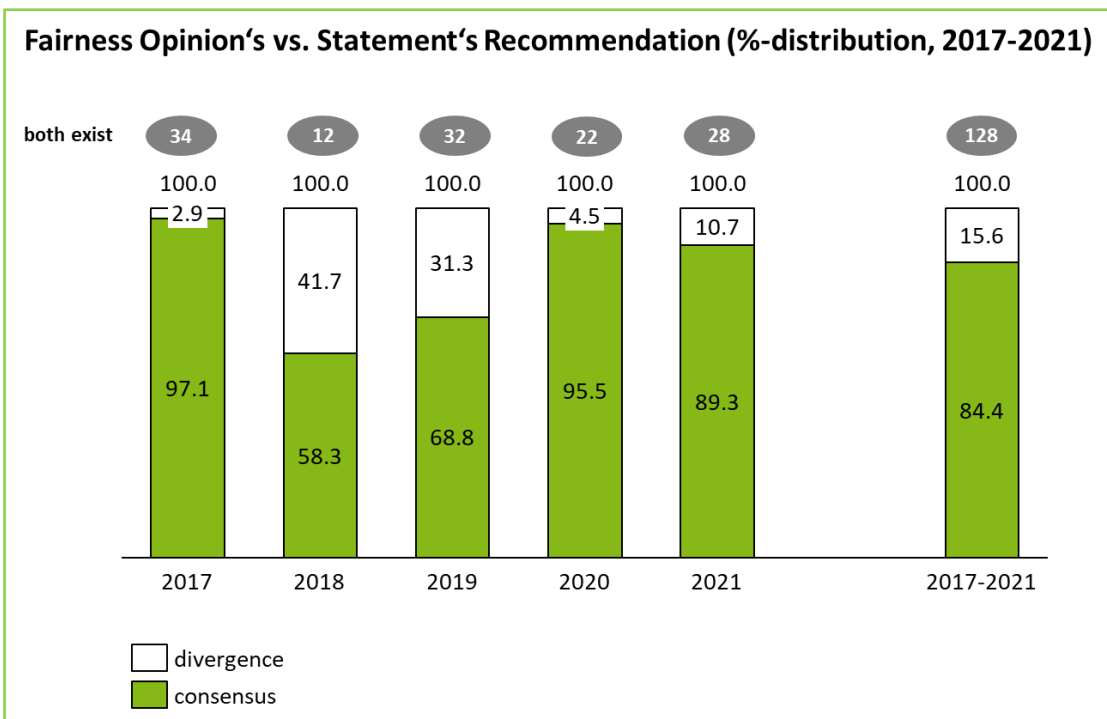


Figure 19: Fairness Opinion's vs. Statement's Recommendation (%-distribution, 2017-2021)

## Statements & Fairness Opinions

Fairness Opinions are provided by different originators which can be divided into four groups: consultants, auditors, private banks and major banks (commercial/investment banks). The market share of commercial/investment banks amounts to 67.9% in 2021, and thus remains prevailing. In 2021, consultants win a share of the market for fairness opinions of 17.9%. The auditors lost their second largest market share and provided 10.7% of the opinions, whereas private banks hold only a minor market position following the trend after 2015. Considering 2017 to 2021 cumulated results, more than half of all the fairness opinions were provided by major banks (60.9%) while consultants and auditors follow with 18.8% and 16.4%, and private banks having the lowest share. The development over the past 5 years is shown in Figure 20<sup>14</sup>.

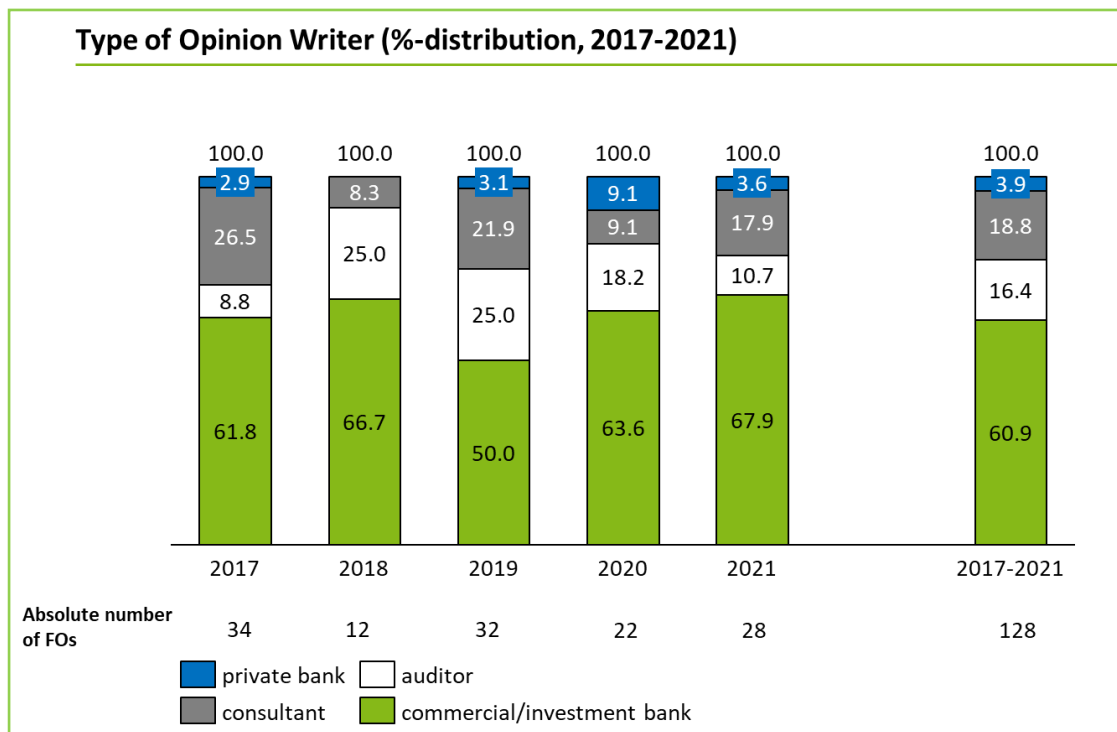


Figure 20: Type of Opinion Writer (%-distribution, 2017-2021)

<sup>14</sup> Delisting tender offers are excluded from this overview.

## Success Rates

Measuring the success of takeover bid is of particular interest. However finding a meaningful measure for “success” is not trivial. As in the preceding reports we employ two different measures for “success”. We start by considering a takeover bid’s success in terms of two states: completed or discontinued acquisitions<sup>15</sup>. We define a binary variable “success” as equal to one if a bidder reached an ownership share of at least 50% or the minimum acceptance threshold determined by the bidder within the defined term of acceptance according to WpÜG<sup>16</sup>, and zero otherwise. Since delisting offers usually do not aim at gaining control of the target by takeover, we exclude them again from this analysis.

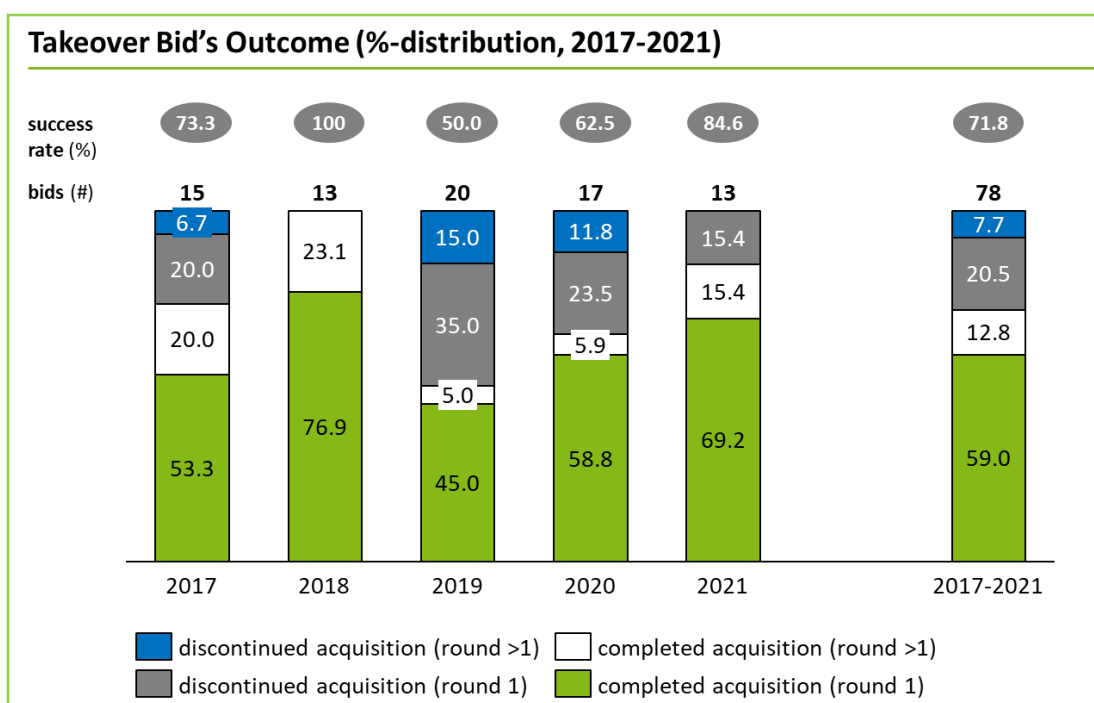


Figure 21: Takeover Bid's Outcome (%-distribution, 2017-2021)

<sup>15</sup>Any transaction in which the minimum acceptance level or an ownership stake of 50% is reached are considered as completed. The remaining cases are classified as discontinued if no renegotiations took place.

<sup>16</sup>We exclude cases where the ownership share has already been above 50% prior to the six months period before the bid. Cases where the bidder has gained a majority within the six months before the bid due to buying arrangements with blockholders are considered as successful.

## Success Rates

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Using this definition, we find that 71.8% of takeover offers over the past five years were successful. The other 28.2% of takeover bids failed either in round one (20.5%) or thereafter (7.7%). The distribution of takeover bid's outcomes from 2017-2021 as well as the cumulated results are presented in figure 21. The ratio of takeover offers crossing the 50% threshold in 2021 was above the average for the last five years: 84.6%. Furthermore, additional bid-rounds yielded an acquisition success for all of the offers of which the acceptance period ended in 2021.

Which factors influence the takeover bid's success? While academic studies dealing with this question usually perform complex multivariate analyses, this report concentrates on the offer premium as the most important impact factor.

Our (obvious) hypothesis is that takeover offers with higher premium c.p. have higher probability of success. Our 0/1 "success" measure defined above reflects the consummation of the deal regardless of the intermediate negotiation process. For 2014-2021 we observe a remarkably high share of acquisitions among takeover bids which are considered as completed and successful according to the above measure. This result can be explained by bidder's prior arrangements with blockholders of a target company. On average, the takeover offers with a premium of 10-15% have the highest fraction of successful offers. For the 2021 we observe all bids with a premium between 0-5%, 5-10%, 15-20%, >25% to be "successful".



## Success Rates

Figure 22 depicts the distribution of takeover bid success in 2021 compared to the cumulated percentages of 2014 to 2021.



Figure 22: Takeover Bid Success per Offer Premium Range (% , 2021 & 2014-2021 cumulated)

\* We aligned the clustering for the success rate to the one for the premium from above.

## Success Rates

As a second alternative measure, we define a “success rate” variable as the number of shares acquired by the bidder during the acceptance period divided by the number of shares not under bidders control when the offer is launched. This variable takes the bidders toehold into account and has a value range of 0% to 100% for all offers.

Figure 23 is a scatter plot with the trend line (line of best fit) that displays the link between success rate and offer premium of takeover bids for the cases from 2014 to 2021.

The graph supports the hypothesis of a positive relationship between premium and success, but also reveals the impact of yet other factors.

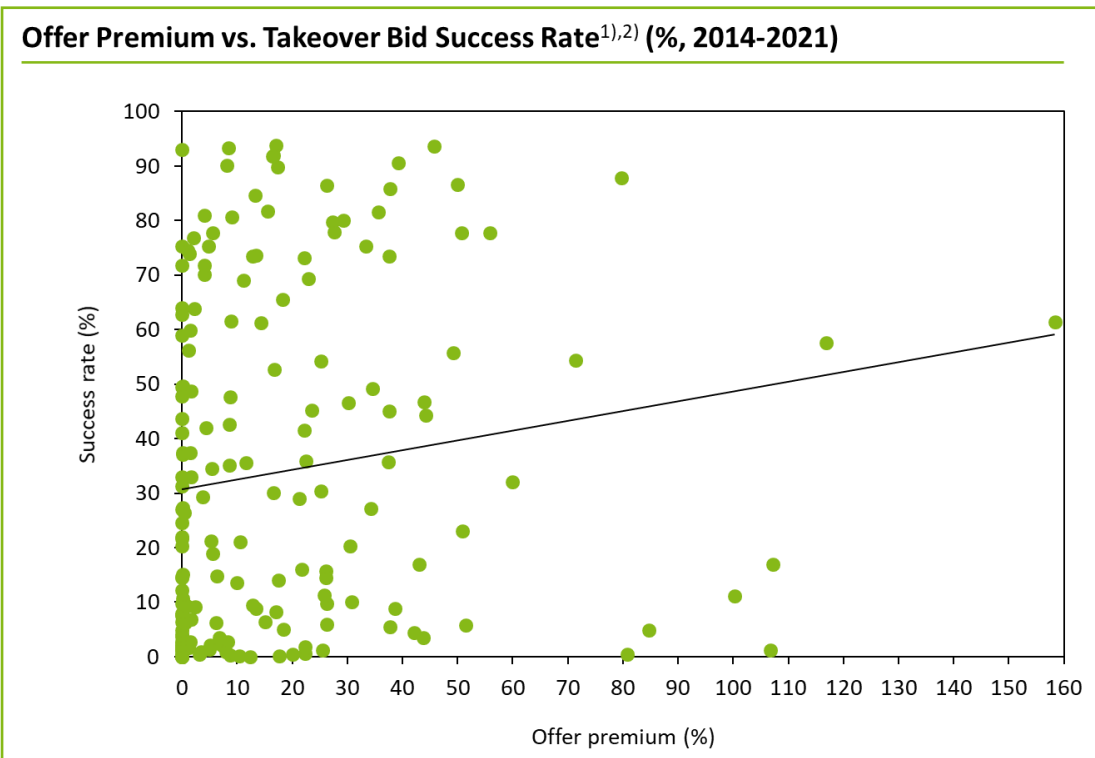


Figure 23: Offer Premium vs. Takeover Bid Success Rate (% , 2014-2021)

- 1) Only takeover bids considered where the ownership share has already been below 50% prior to the six months period before the bid
- 2)  $\text{Offer premium} = (\text{Offer price}) / (3\text{-Month Weighted Average Stock Price}) - 1$

## Success Rates

Finally, we analyze the connection between the statement's recommendations and the Fairness Opinion's results concerning the success rate of takeover bids. Figure 24 illustrates the analysis in a cross table. It shows that the success rate rises if both the statement and the Fairness Opinion give a positive recommendation (2017-2021: 78.1%). One possible explanation is the fact that target companies that recommend accepting an offer in their statement have no reason to publish a Fairness Opinion that might have a negative opinion on the adequacy of the offer. For the cases when both the target company's statement and the Fairness Opinion took a negative position, the success rate is relatively low (12.5%) but not negligible. A closer analysis of these cases reveals that a previous agreement with a large blockholder of the target company was the foundation of the bid's acceptance. More precisely, before publishing the public takeover bid, the bidder had already collected a sufficient number of selling commitments from target blockholders to achieve the majority.

Success Rate by Statement & FO recommendation (% , 2017-2021 cumulated)				
	Statement	Fairness Opinion		
		fair	not mentioned	inadequate
	acceptance	78.1%	NA	0 %
	neither	57.1%	NA	75 %
	rejection	NA	NA	12.5 %

Figure 24: Success Rate by Statement & FO recommendation (% , 2017-2021 cumulated)

## Takeover Case Study: Deutsche Wohnen SE

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On May 24, 2021, Vonovia SE (hereinafter “Vonovia”) and Deutsche Wohnen SE (hereinafter “Deutsche Wohnen”) signed a business combination agreement to merge both companies and in this context announced a voluntary public takeover offer for the shareholders of Deutsche Wohnen. Both companies operate as residential real estate companies in Germany and hold diverse property portfolios of residential and commercial units. The offer document was published on June 23, 2021 according to which the offered consideration was set to EUR 52.00 in cash. The corresponding premium over the 3-months volume weighted average price was 22.4%. The offer was considered financially adequate by the Supervisory Board and the Executive Board of Deutsche Wohnen. In their joint opinion statement, the boards relied on the fairness opinions of Deutsche Bank, Goldman Sachs, J.P. Morgan, UBS and VictoriaPartners confirming the financial adequacy of the consideration and recommended the shareholders to accept the offer. The takeover bid was conditional to the minimum acceptance rate of 50% plus 1 share. As of the publication date, the bidder directly held 18.35% of the voting rights of the target company, and as of the final date of the acceptance period on July 21, 2021 the acceptance rate was 29.27% resulting in total of 47.62% of the target shares acquired by Vonovia. Since the condition of achieving the minimum acceptance threshold had not been met, the takeover offer was cancelled.

That was not the first attempt of Vonovia to merge with its competitor Deutsche Wohnen. In the end of 2015, the shareholders of Deutsche Wohnen were offered 7 shares of Vonovia and a cash payment of EUR 83.14 for 11 shares of Deutsche Wohnen. The premium over the 3-month VWAP was ca. 10.5%. The Board of Directors considered this offer to be inadequate and advised the shareholders not to accept it. As a result, the bidder was not able to reach the minimum acceptance threshold, even after reducing it from 57% to 50%. While the takeover offer in 2015 faced a resistance from the target company, the offer in June 2021 faced opportunistic behaviour of hedge funds and passive tender behaviour of index funds.

According to German regulation, the bidder can launch a new takeover bid after the failure of the voluntary public offer, only upon the exemption from the one-year statutory lock-up period by the German Federal Financial Supervisory Authority (BaFin). Vonovia submitted a corresponding application to BaFin and Deutsche Wohnen has agreed to be exempted from the lock-up period.

## Takeover Case Study: Deutsche Wohnen SE

On August 5, 2021, Vonovia published an improved offer to the shareholders of Deutsche Wohnen by EUR 1.00 per share to EUR 53.00 per target share. This corresponded to a premium of 24.8% over the 3-months VWAP prior to the first offer announcement in May 2021. The transaction implies a Revenue multiple of roughly 13x and an EBITDA multiple of roughly 51x. As of June 30, 2021 the EPRA NTA per Deutsche Wohnen share was approximately EUR 52.67.

The improved offer was also conditional to the minimum acceptance rate of 50%, however the condition was waived on September 13, 2021. Due to this change in the offer the initial acceptance period until September 20 was extended to October 7.

As of October 7, 2021, Vonovia secured control of 60.3% of the shares. The additional acceptance period began on October 8 and ended on October 21, 2021. The takeover offer resulted in 87.6% acquired stake.

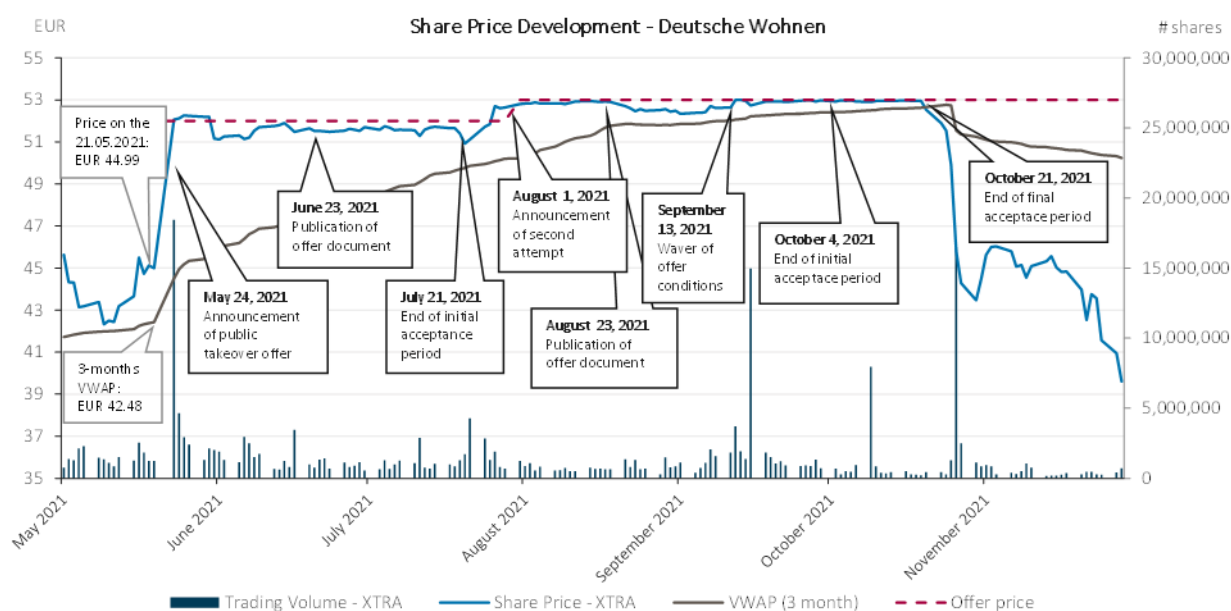


Figure 25: Share price development—Deutsche Wohnen

## Takeover Success Factors

Having collected data on all German takeover offers since 2006, the Center for Corporate Transactions and Private Equity CCTPE @ HHL, finexpert and Value Trust hold one of the largest and deepest databases on German takeover offers, including all data of bidders, targets, offers, success rates, toeholds and capital markets. We use these data to analyze the success factors of takeover offers via regression analyses and update our results annually and decided to publish the most important results in our takeover report.

Using the data from 2006 to 2021 we find (again) the target shareholder structure to have a significant impact on the outcome of the offer: For control-taking offers with a toehold less than 30% especially ownership stakes of ETF have a negative effect on the offer success. (see our research paper on this topic from SSRN [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3443622](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3443622)) The bidder's toehold also has a negative effect, indicating that a high toehold makes it harder and more expensive to acquire additional target shares. On the contrary, a positive management recommendation, a high premium offered support the success of a takeover offer.

Our model works remarkably well in explaining the takeover success factors; for control taking offers it explains more than 50% of the variation of our measures for takeover success. This is supported by the following graph plotting the estimated acceptance rate from our model against the realized ones for all our data since 2005; the straight line in the graph highlights the ideal one-to-one match.

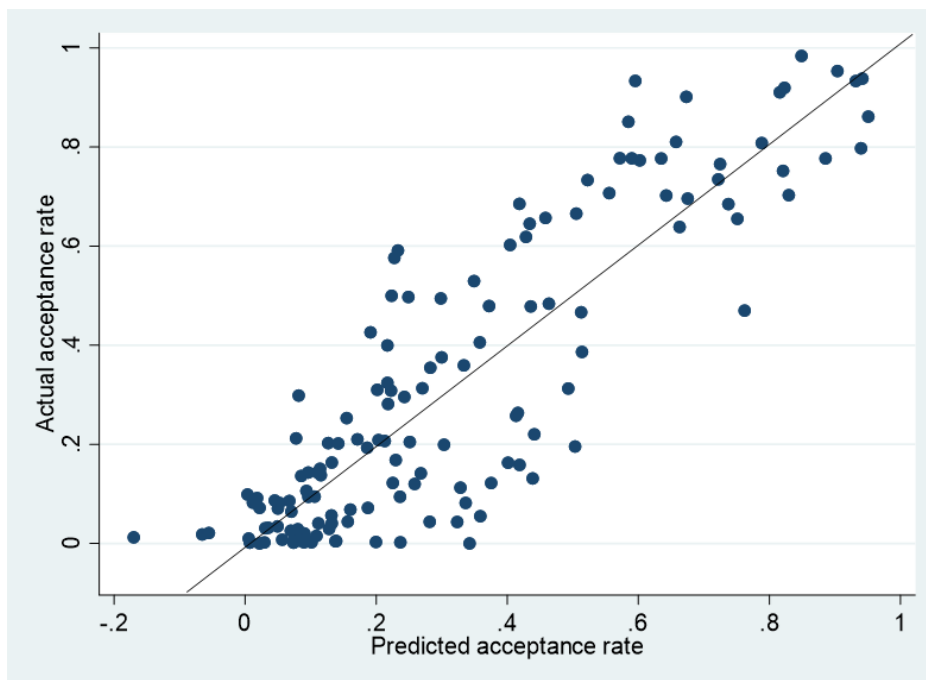


Figure 26: Actual acceptance rate vs. Predicted acceptance rate (2005-2021)

## Endgame Analysis

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### Post-offer structural measures

After the completion of the takeover procedure the bidder has several measures at hand to finally reach the 100% ownership in the target company. The signing of a domination and profit- and loss transfer agreement (DPLTA) between the company and the majority shareholder requires a 75% vote in a shareholder meeting. German corporate law requires to offer a compensation to the minority shareholders (§305 AktG) that decide to leave the company (and accept the compensation) and a guaranteed dividend payment (§304 AktG) to those who decide to stay. The law requires the minimum compensation to be offered to be the highest of two values: the VWAP relating to the 3 months before the DPLTA announcement and the intrinsic value of the share calculated by a corporate valuation. In our sample we find that almost all compensation offers related to DPLTA were just equal to the minimum required by law. Finally, the German corporate law offers several options to Squeeze-Out<sup>17</sup> the remaining minority shareholders against payment of a fair compensation for the compulsory sale of their shares. We find that in the vast majority of cases the compensation offer is again just to meet the minimum requirement.

The cash compensation and the guaranteed dividend are determined by the majority shareholder and are subject to a review by the court in an appraisal proceeding subsequent to the measure becoming effective.

<sup>17</sup> German corporate law recognizes three types of Squeeze-Out based on the corresponding legal framework: Takeover Act (WpÜG), Stock Corporation Act (AktG) and Transformation Act (UmwG).

## Endgame Analysis

Our databank contains information on 440 primary takeover bids from 2005 to 2021 and the data on all structural measures following these bids. Of these, 199 takeover offers had subsequent structural measures. In total, for 182 structural measures minority shareholders initiated appraisal proceedings. 129 of these proceedings were finalized, i.e. there is no (further) appeal against the court decision. The other 53 appraisal proceedings are currently under court review. Figure 28 provides an overview of the takeover offers, structural measures, and related appraisal proceedings that constitute the databank and serve as a basis for the takeover endgame analysis.

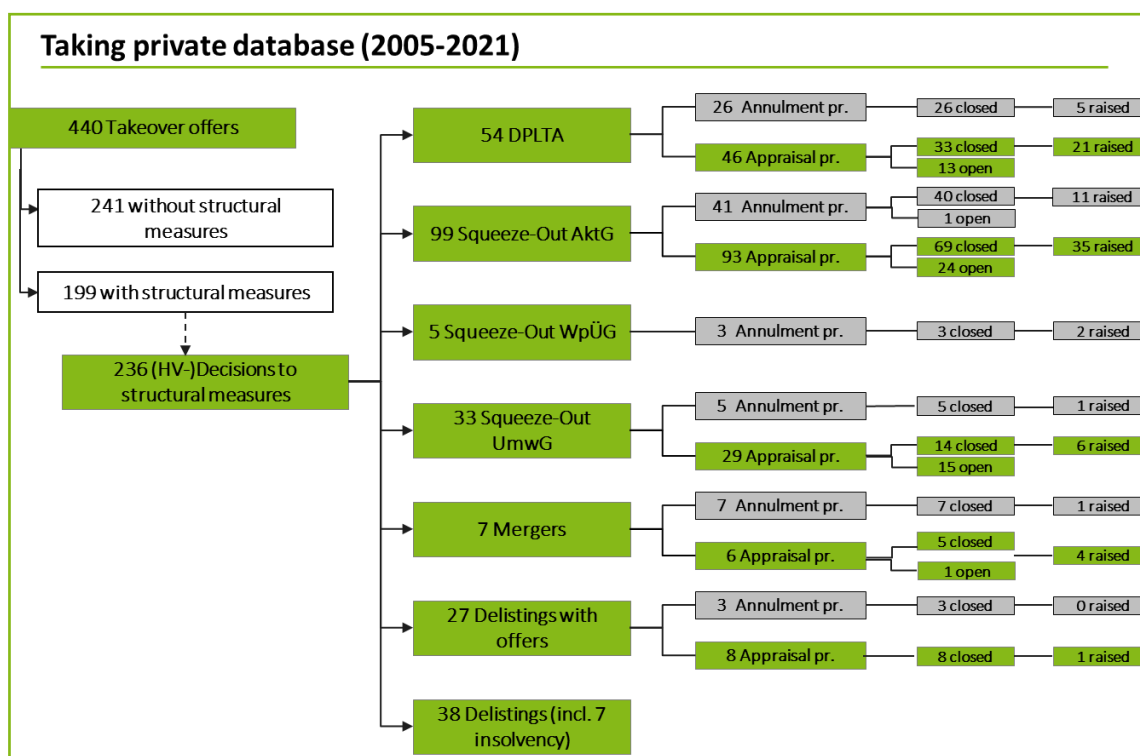


Figure 28: Overview of the taking-private database (as of 31.12.2021)



## Endgame Analysis

Out of 440 primary takeover bids published in 2005-2021 144 acquirers eventually obtained full ownership of the target company. We observe 17 different paths in taking-private strategies. Figure 5 presents the frequency of these paths and the number of completed takeovers (including closing of appraisal proceeding). The equal-sign (=) indicates that measures were taken concurrently, and the arrow-sign (➔) shows the sequence of events. In 99 out of 144 cases, acquirers enforced a Stock Corporation Squeeze-Out. In the majority of cases there are no prior structural measures before the final squeeze-out (58 cases). Yet, in 34 takeovers, the signing of a DPLTA was concluded within the frame of the chosen taking-private strategy. Takeover Act Squeeze-Out was rarely implemented in practice (only 5 cases)<sup>18</sup>. In 7 cases the takeover was resolved by a merger, of which the most recent case was in 2013. Being not a structural action per se, delisting also plays an important role in taking-private strategies, and is often used in parallel with other structural measures.

	Structural measures post takeover offer	Frequency	Completed takeover (incl. appraisal proceeding)
1	Stock Corporation Squeeze-Out (AktG)	58	43
2	Transformation Squeeze-Out (UmwG)	27	13
3	Merger	4	4
4	Takeover Act Squeeze-Out (WpÜG)	1	1
5	1. Takeover Act Squeeze-Out (WpÜG) ➔ 2. DPLTA	3	3
6	DPLTA = Stock Corporation Squeeze-Out (AktG)	5	5
7	1. DPLTA ➔ 2. Stock Corporation Squeeze-Out (AktG)	14	11
8	1. DPLTA ➔ 2. Merger	3	2
9	1. DPLTA ➔ 2. Transformation Squeeze-Out (UmwG)	2	0
10	1. DPLTA = 1. Delisting* ➔ 2. Stock Corporation Squeeze-Out (AktG)	3	3
11	1. DPLTA ➔ 1. Delisting ➔ 2. Stock Corporation Squeeze-Out (AktG)	2	2
12	1. Delisting* ➔ 2. Stock Corporation Squeeze-Out (AktG)	9	2
13	1. Delisting* ➔ 2. Transformation Squeeze-Out (UmwG)	2	0
14	1. Delisting* ➔ 2. DPLTA ➔ 3. Stock Corporation Squeeze-Out (AktG)	2	0
15	1. Delisting ➔ 2. Stock Corporation Squeeze-Out (AktG)	6	3
16	1. Delisting ➔ 2. Transformation Squeeze-Out (UmwG)	2	1
17	1. Delisting ➔ 2. Takeover Act Squeeze-Out (WpÜG)	1	1
		144	94

\* Delisting with a purchase offer to shareholders

Figure 29: Taking-private strategies post takeover offers (2005-2021)

<sup>18</sup> In some of these cases a DPLTA was signed after the squeeze-out. The reason for this seemingly odd strategy was that some minority shareholders tried to challenge and block the squeeze-out.

## Endgame Analysis

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An appropriate compensation for the shares of minority shareholders shall be not less than the VWAP for 3 months prior announcement of structural measure, and not less than the dividend discount value (“Ertragswert”) per share determined by a verified company valuation. Thus, the maximum of these two limits is considered to be the minimum appropriate compensation. We analyze the distribution of the premium over VWAP. We exclude the cases where VWAP was not available due to extremely low trading volume or shares not being listed in the regulated market. Subsuming over all structural measures, the average premium over VWAP amounts to 10.69%.

Minority shareholders may start appraisal proceedings under which the fairness of the DPLTA guarantee dividends, DPLTA compensation, Merger exchange ratio and/or Squeeze-Out compensation shall be verified (Spruchverfahren). Appraisal proceedings cannot delay or block the enforcement of a structural measure. In contrast, an annulment proceeding against the General Meeting decision blocks the enforcement of a structural measure. The proceeding is carried out under the regional court (first instance) and can be resolved by a judicial compromised agreement or a court ruling. The compensation offer cannot be decreased in appraisal proceeding, and the majority shareholder shall carry all costs of litigation. The regional court decision is a subject to appeal under the higher regional court (second instance) whose decision is final. The higher regional court has a right to increase, decrease or annul the first instance ruling.

## Endgame Analysis

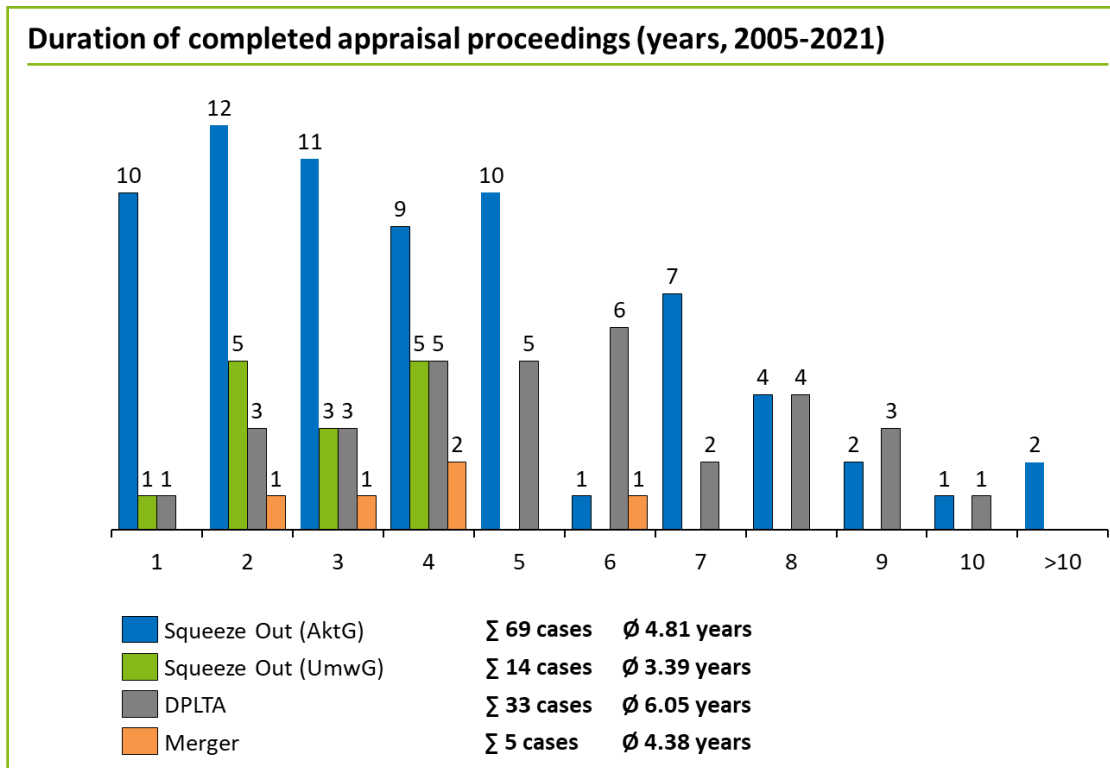


Figure 30: Duration of completed appraisal proceedings (years, 2005-2021)

In Figure 30, we first evaluate the duration of appraisal proceedings. On average, the appraisal proceedings to a compensation offer related to a DPLTA run significantly longer than in other cases (6.05 years). In 9 DPLTA proceedings the duration exceeded 8 years and only small number of cases could be resolved within 2 years. Appraisal proceedings of Stock Corporation Squeeze-Outs last on average 4.81 years; however, the data show that the length of the proceeding spreads almost evenly over the first 5 years. The proceedings related to Transformation Squeeze-Outs display the shortest duration: 3.39 years on average. There are only 5 completed appraisal proceedings to Merger compensations with an average duration of 4.38 years. One further proceeding to Merger is still carried out since 2009 (since 2013 by second instance).

Finally, our analysis revealed, that, on average, minority shareholders received a compensation increase of 8.03% as compared to before the proceeding.

## Transaction Details 2021

The last chapter of this report gives a detailed overview of all takeovers and takeover bids in 2021, see figure 25. For each transaction we provide all parameters that have been analyzed on an aggregated level in the previous chapters.

Offer date	Bidder	Target	Offer type	Investor type	Bid round	Payment method	Share before offer	Share before offer from major inv.	Acceptance rate
01/02/2021	Kublai GmbH	Tele Columbus AG	Takeover	FI	1	Cash	0,0%	0,0%	92,0%
02/02/2021	Shareholder Value Beteiligungen AG, Shareholder Value Stiftung	SMT Scharf AG	Delisting	FI	1	Cash	30,2%	30,2%	6,3%
22/02/2021	Musai Capital Ltd.	DEAG Deutsche Entertainment AG	Delisting	FI	1	Cash	0,0%	0,0%	1,4%
26/03/2021	ABBA BidCo AG	AKASOL AG	Takeover	SI	1	Cash	0,0%	0,0%	89,1%
09/04/2021	PKG Schürfeld GmbH	SURTECO GROUP SE	Takeover	FI	1	Cash	27,8%	12,1%	0,0%
05/05/2021	Hörmann Digital Beteiligungs GmbH	ORBIS AG	Takeover	SI	1	Cash	30,4%	30,4%	4,3%
21/05/2021	ams Offer GmbH	OSRAM Licht AG	Delisting	SI	1	Cash	69,5%	69,5%	7,2%
27/05/2021	Lopesan Touristik	LS Invest AG	Delisting	SI	1	Cash	76,3%	76,3%	13,3%
23/06/2021	Vonovia SE	Deutsche Wohnen SE	Takeover	SI	1	Cash	18,4%	18,4%	29,3%
09/07/2021	Digital Turbine Media, Inc.	Fyber N.V.	Takeover	SI	1	Cash	95,2%	0,4%	3,9%
27/07/2021	HomeAdvisor GmbH	MyHammer Holding AG	Delisting	SI	1	Cash	84,3%	84,3%	0,3%
30/07/2021	Pierer Industrie AG	Leoni AG	Takeover	SI	1	Cash	11,8%	11,8%	0,2%
04/08/2021	Kublai GmbH	Tele Columbus AG	Delisting	FI	1	Cash	94,4%	94,4%	0,4%
09/08/2021	Adler Pelzer Holding GmbH	STS Group AG	Delisting	SI	1	Cash	73,3%	0,0%	0,3%
16/08/2021	ZEAL Network SE	Lotto 24 AG	Delisting	SI	1	Cash	93,4%	93,4%	1,4%
23/08/2021	Vonovia SE	Deutsche Wohnen SE	Takeover	SI	1	Cash	30,0%	30,0%	24,8%
25/08/2021	Voltage BidCo GmbH	Schaltbau Holding AG	Takeover	FI	1	Cash	0,0%	0,0%	76,7%
23/08/2021	Vonovia SE	Deutsche Wohnen SE	Takeover	SI	2	Cash	30,0%	30,0%	24,8%
14/09/2021	Zorro Bidco S.à r.l.	zooplus AG	Takeover	FI	1	Cash	0,0%	0,0%	0,0%
14/09/2021	Zorro Bidco S.à r.l.	zooplus AG	Takeover	FI	2	Cash	0,0%	0,0%	89,9%
21/09/2021	Rhine Rail Investment AG (zuvor: Blitz 21-821 AG)	Aves One AG	Takeover	FI	1	Cash	0,8%	0,8%	88,3%
27/09/2021	Faurecia Participations GmbH	HELLA GmbH & Co. KGaA	Takeover	SI	1	Cash	0,0%	0,0%	19,5%
06/10/2021	Pet Bidco GmbH	zooplus AG	Takeover	FI	1	Cash	0,0%	0,0%	0,5%
26/10/2021	GRIFOLS, S.A.	Biotest Aktiengesellschaft	Takeover	SI	1	Cash	0,0%	0,0%	
29/10/2021	Vonovia SE	GSW Immobilien AG	Takeover	SI	1	Cash	94,0%	94,0%	
29/10/2021	Burda Digital SE	HolidayCheck Group AG	Delisting	SI	1	Cash	73,1%	73,1%	
05/11/2021	Aroundtown SA	TLG IMMOBILIEN AG	Delisting	SI	1	Cash	79,5%	79,3%	
09/11/2021	RFR InvestCo 1 S.à r.l.	AGROB Immobilien AG	Takeover	SI	1	Cash	58,6%	0,0%	
12/11/2021	Acorn HoldCo, Inc.	ADVA Optical Networking SE	Takeover	FI	1	Share	0,0%	0,0%	
16/11/2021	Voltage BidCo GmbH	Schaltbau Holding AG	Delisting	FI	1	Cash	78,0%	76,4%	
24/11/2021	Zorro Bidco S.à r.l.	zooplus AG	Delisting	FI	1	Cash	82,0%	0,1%	
07/12/2021	CTP N.V.	Deutsche Industrie REIT-AG	Delisting	SI	1	Mixed	0,0%	0,0%	
13/12/2021	Alexandrite Lake Lux Holdings S.à r.l.	alstria office REIT-AG	Takeover	FI	1	Cash	43,3%	33,0%	
17/12/2021	Atlantic BidCo GmbH	Aareal Bank AG	Takeover	FI	1	Cash	0,0%	0,0%	
20/12/2021	deltus 36. AG	EASY SOFTWARE AG	Delisting	FI	1	Cash	78,5%	78,4%	
17/12/2021	Atlantic BidCo GmbH	Aareal Bank AG	Takeover	FI	2	Cash	0,0%	0,0%	
12/11/2021	Acorn HoldCo, Inc.	ADVA Optical Networking SE	Takeover	SI	2	Share	0,0%	0,0%	

Figure 31: Transaction Details — Part 1

## Transaction Details 2021

Offer date	Bidder	Target	Offer pre- mium	Take- over- value (m EUR)	Joint State- ment Recomm.	FO exists	FO result (Ade- quacy)
01/02/2021	Kublai GmbH	Tele Columbus AG	37,7%	414,6	Accept	yes	yes
02/02/2021	Shareholder Value Beteiligungen AG, Shareholder Value Stiftung	SMT Scharf AG	0,9%	26,5	Reject	yes	no
22/02/2021	Musai Capital Ltd.	DEAG Deutsche Entertainment AG	0,0%	60,6	Neither nor	no	
26/03/2021	ABBA BidCo AG	AKASOL AG	22,1%	727,4		yes	yes
09/04/2021	PKG Schürfeld GmbH	SURTECO GROUP SE	0,0%	269,5	Neither nor	yes	no
05/05/2021	Hörmann Digital Beteiligungs GmbH	ORBIS AG	6,2%	51,0	Reject	yes	
21/05/2021	ams Offer GmbH	OSRAM Licht AG	0,5%	1.547,0	Accept	no	
27/05/2021	Lopesan Touristik	LS Invest AG	1,1%	54,1	Neither nor	yes	yes
23/06/2021	Vonovia SE	Deutsche Wohnen SE	22,4%	15.280,1	Accept	yes	yes
09/07/2021	Digital Turbine Media, Inc.	Fyber N.V.	9,1%	22,2	Accept	no	
27/07/2021	HomeAdvisor GmbH	MyHammer Holding AG	0,0%	24,7	Accept	yes	yes
30/07/2021	Pierer Industrie AG	Leoni AG	-0,5%	360,0	Reject	yes	no
04/08/2021	Kublai GmbH	Tele Columbus AG	0,6%	49,5	Neither nor	no	
09/08/2021	Adler Pelzer Holding GmbH	STS Group AG	0,0%	12,7	Accept	yes	yes
16/08/2021	ZEAL Network SE	Lotto 24 AG	0,0%	40,2	Neither nor	yes	yes
23/08/2021	Vonovia SE	Deutsche Wohnen SE	5,3%	13.502,0	Accept	yes	
25/08/2021	Voltage BidCo GmbH	Schaltbau Holding AG	43,9%	580,6	Accept	yes	yes
23/08/2021	Vonovia SE	Deutsche Wohnen SE	5,3%	13.502,0	Accept	yes	yes
14/09/2021	Zorro Bidco S.à r.l.	zooplus AG	75,9%	3.288,6	Accept	yes	yes
14/09/2021	Zorro Bidco S.à r.l.	zooplus AG	79,7%	3.360,1	Accept	yes	
21/09/2021	Rhine Rail Investment AG (zuvor: Blitz 21-821 AG)	Aves One AG	38,7%	165,2	Accept	yes	yes
27/09/2021	Faurecia Participations GmbH	HELLA GmbH & Co. KGaA	1,6%	6.666,7	Accept	yes	yes
06/10/2021	Pet Bidco GmbH	zooplus AG	20,1%	3.360,1	Reject	no	
26/10/2021	GRIFOLS, S.A.	Biotest Aktiengesellschaft	16,4%	1.582,9	Accept	yes	yes
29/10/2021	Vonovia SE	GSW Immobilien AG	0,0%	389,3	Neither nor	no	
29/10/2021	Burda Digital SE	HolidayCheck Group AG	1,5%	63,4	Accept	yes	yes
05/11/2021	Aroundtown SA	TLG IMMOBILIEN AG	13,4%	732,9	Accept	no	
09/11/2021	RFR InvestCo 1 S.à r.l.	AGROB Immobilien AG	17,1%	60,2	Neither nor	yes	no
12/11/2021	Acorn HoldCo, Inc.	ADVA Optical Networking SE	21,9%	766,4	Accept	yes	yes
16/11/2021	Voltage BidCo GmbH	Schaltbau Holding AG	4,9%	128,3	Accept	no	
24/11/2021	Zorro Bidco S.à r.l.	zooplus AG	22,1%	617,8	Accept	no	
07/12/2021	CTP N.V.	Deutsche Industrie REIT-AG	0,0%	549,2	Neither nor	yes	yes
13/12/2021	Alexandrite Lake Lux Holdings S.à r.l.	alstria office REIT-AG	17,7%	1.969,4	Accept	yes	yes
17/12/2021	Atlantic BidCo GmbH	Aareal Bank AG	12,2%	1.735,9	Accept	yes	yes
20/12/2021	deltus 36. AG	EASY SOFTWARE AG	0,0%	18,5	Accept	no	
17/12/2021	Atlantic BidCo GmbH	Aareal Bank AG	20,0%	0,0	Accept	no	
12/11/2021	Acorn HoldCo, Inc.	ADVA Optical Networking SE	21,9%	766,4	Accept	no	

Figure 31: Transaction Details — Part 2