

## A NOTE ON THE SALE OF THYSSENKRUPP'S ELEVATOR AND ESCALATOR BUSINESS

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### 1. Review of the Facts

In May 2019, first press reports emerged that Thyssenkrupp AG may potentially sell parts of its elevator division, which produces both elevators and escalators. In early September 2019, Thyssenkrupp AG announced that it also considers the option to sell the entire elevator division as a whole. Kone Corporation, a major player in the elevator and escalator industry ("E&E industry"), has publicly signalled its interest in an acquisition. The Company further signalled that in case of a successful bid it would divest the complete European elevator business of Thyssenkrupp to the private equity firm CVC for antitrust reasons.<sup>1</sup> Several other buyout groups compete with Kone without facing similar antitrust issues. We use the "battle for Thyssenkrupp's crown jewel"<sup>2</sup> as an opportunity to discuss competitive effects of mergers in highly concentrated markets.

The E&E industry is an important economic sector in Germany and in most industrialized countries of the world with a growing importance in view of the aging society and the importance of accessibility. The E&E industry in Europe is essentially shaped by four large, vertically integrated companies, namely Kone Corporation ("Kone"), Otis Elevator Company ("Otis"), Schindler Holding AG ("Schindler"), and Thyssenkrupp ("Thyssenkrupp"), often also referred to as the "Big 4". The Big 4 combine about three quarters of all sales in Europe and they even reach a combined share of 80 to 90% in some European countries.<sup>3</sup> In recent decades, the industry has experienced a consolidation trend, mainly due to various acquisitions of the Big 4. This has led to rather concentrated markets in Europe. A potential acquisition of Thyssenkrupp's E&E business by Kone would induce a major market concentration, as such a takeover would differ considerably in size and value from past acquisitions. This note analyses the likely effects on competition that such a concentration would have in the relevant markets in Europe and the concerns that competition companies may raise. However, our conclusions are also relevant for the competitive assessment of non-European markets with similar structures as in Europe.<sup>4</sup>

### 2. The Elevator and Escalator Industry

The E&E industry can essentially be divided into the sale and installation of new elevators, the sale and installation of new escalators, and the aftermarkets for their respective servicing, maintenance, repair, and modernisation. These industry segments are generally characterised by different sets of players and market structures. In Germany, the Big 4 dominate the E&E industry with an overall share of business of approximately

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<sup>1</sup> Handelsblatt, 1/14/2020, p.20, „Letzter Aufruf für die Aufzugsparte“.

<sup>2</sup> See for instance Financial Times, 1/9/2020, "The \$20bn battle for Thyssenkrupp's crown jewel heats up".

<sup>3</sup> See European Commission (2007), Commission Decision of 21. February 2007, Case COMP/E-1/38.823 – PO/Elevators and Escalators, para. 49.

<sup>4</sup> See also the blog entry by Fruits and Manne of 12 November 2019 on the antitrust risks of four to three mergers in general and a potential ThyssenKrupp/Kone merger in particular under <https://truthonthemarket.com/2019/11/12/antitrust-risks-thyssenkrupp-kone-4-3-merger/>, accessed on 11/13/2019. This analysis also covers the US and other non-European countries.

60%. The remaining 40% are divided between various small and medium sized companies (“SME”), with a huge variety of mostly regionally operating SME being active in the servicing sector.<sup>5</sup> There are only three companies in Germany, namely OSMA, Schmitt + Sohn and Vestner, which are active on a nationwide scale.

Industry structures in other European countries differ only slightly from the one in Germany. The Big 4 dominate the national E&E industry with combined industry shares varying from 60% to 90%.<sup>6</sup> In most European countries there are only very few SMEs, which are typically active on a nationwide scale (see Table 1). These companies do usually not operate across Europe. At most, they are active in few countries, but, typically, they are to a large extent active in the corresponding country listed below.

**Table 1: Small and Medium Sized Entities that are to a large extent active on a Nationwide Scale in Certain National Markets for the Sale and Installation of New Elevators**

Country	Germany	Spain	Greece	Sweden	Italy	UK
Company	Schmitt + Sohn/ OSMA/ Vestner	Orona/ Ascensores Eninter/ Ascensores Embarba	Kleemann	Motum Group	IGV Group/ GMV Martini SPA/ Maspero Elevatori	Pickerings Lift

Source: Own research.

More than a decade ago, the European Commission has, in the context of cartel proceedings, described the E&E industry as being highly concentrated, with the Big 4’s aggregate European share of sales in the elevators and escalators sectors amounting to approximately 77% (by volume) in 2003.<sup>7</sup> For Germany, the Big 4’s share in 2003 was estimated by the European Commission to amount to nearly 63% of all elevator sales (by value) and nearly 100% of all escalator sales (by value). In other EU member states, the Big 4’s shares in elevator sales have even been larger in 2003.

Thyssenkrupp and Kone are two of the four major players in the E&E industry in Europe and their activities overlap considerably in all the areas mentioned above. Compared to previous takeovers, an acquisition of Thyssenkrupp by Kone would differ considerably in terms of size and value and such a hypothetical takeover would, hence, have considerable effects on the structure of the relevant markets and most likely lead to significant negative impacts on effective competition in many markets.<sup>8</sup>

### 3. Relevant Markets

For the competitive assessment, robust definitions of the relevant antitrust markets concerned are of decisive importance. In previous decisions, national competition authorities and the European Commission have

<sup>5</sup> See Dispan (2015), Aufzugs- und Fahrtreppenbranche in Deutschland, Entwicklungstrends und Herausforderungen, Branchenreport 2015, Heft 1/2015, p.2 and p.21.

<sup>6</sup> See *ibid.*, p.21.

<sup>7</sup> See European Commission (2007, para. 49), *supra* note 3.

<sup>8</sup> See also Fruits and Manne (2019), *supra* note 4.

distinguished between separate markets for (1) the sale and installation of elevators, (2) the sale and installation of escalators, and (3) the aftermarkets for their service and repair. Concerning the geographic scope of these markets, the European Commission has defined nationwide markets in the elevator and escalator cartel proceedings for sales and installations as well as for service and repair. Most national competition authorities have also defined the markets for sales and installation at the country level, while markets for service and repair were sometimes even defined locally, e.g., at the level of federal states in Germany or regions in Spain.

The business of selling and installing elevators can be further subdivided into three markets, namely (a) a standard elevator market, (b) a market for specialised, tailor-made elevators and (c) a market for high-rise projects. The competitive conditions in these three (sub-)markets differ considerably from a hypothetical joint market for the sale and installation of all elevators, as SME`s effectively constrain the Big 4`s behaviour only in the market for specialised, tailor-made elevators, excluding high-rise projects. Competition in the standard elevator market through companies other than the Big 4 is rather limited, at most the larger, nationwide active SME exert some competitive pressure on the Big 4. In the market for high-rise projects in Europe the Big 4 appear to face no competition from other companies at all. The most severe competition is in the market for specialised, tailor-made elevators where the Big 4 do not enjoy economies of scale, as opposed to the standard elevator market.

### **3.1. The Markets for Sale and Installation of Standard Elevators and Special Elevators**

The elevator business can be divided into standard and special elevators, which differ in the following respect: Standard elevators are produced industrially in large quantities, as they exhibit a high degree of standardisation, which gives rise to substantial economies of scale so that there are clear advantages of large-scale (mass) production.<sup>9</sup> According to market studies, standard elevators offer a high level of quality at a relatively low price.<sup>10</sup> In contrast, special elevators are characterised by a high degree of individuality and architectural speciality so that special elevators are produced at higher cost. Hence, they command higher prices than standard elevators. The market for special elevators is more of a made-to-measure nature where customers can satisfy their very special preferences, needs, or special technical requirements, which standard elevators cannot fulfil. Standard elevators mainly serve the basic need of transportation without special design or characteristics. Thus, from a demand side perspective standard elevators serve a different demand than special elevators. In addition, standard and special elevators can differ substantially in terms of construction design, features and functionality.

Given the different production logic for standard and special elevators, it is not surprising that the Big 4 are very strong in the market for standard elevators where they can exploit their economies of scale. As a consequence, standard elevators account for the majority of the Big 4`s elevator business in numbers, according to industry experts.<sup>11</sup> In contrast, SMEs mostly (but not exclusively) focus on special elevators

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<sup>9</sup> See Dispan (2015, p.47 et seqq.), supra note 5 and Higher Regional Court of Vienna (2014), Decision of the Higher Regional Court in the Matter Bundeswettbewerbsbehörde/Otis GmbH, 15.01.2014, Ref. Nr. 26 Kt 103/13.

<sup>10</sup> See Dispan (2015, p.47 et seqq.), supra note 5.

<sup>11</sup> See Higher Regional Court of Vienna (2014), supra note 9.

where economies of scale are less important, even though some SMEs also produce standard elevators or resell these from third parties to install them in some cases. Consequently, in the market for standard elevators the Big 4 are less constrained through competition by SMEs than in the special elevator market (with the exception of high-rise projects).

Generally speaking, supply-side substitutability could, in theory, support a wider market delineation than a market definition based on demand-side substitutability alone. If firms that do not produce the concerned products can easily switch production without substantial costs and without facing time constraints, even firms not currently active in a market can exert competitive pressures. As the Big 4 can easily switch production capacities from standard elevators to special ones (as all of the Big 4 already offer the construction of individualised elevators), they constrain the SMEs in their pricing. In contrast, SMEs find it much more difficult to compete in the market for standard elevators, especially due to the economies of scale that the Big 4 enjoy in production, which prevent SMEs from competing in the standard elevator market on large scale. Thus, even though SMEs may easily enter into the standard elevator market from a pure technical perspective (i.e., because production facilities enable a fast adjustment to standard elevators component parts), the lack of the necessary economies of scale limit supply-side substitutability. Hence, the Big 4's pricing of standard elevators is largely constrained by the other Big 4 firms' pricing, but not so much by SMEs in that market. This conclusion is consistent with statements of industry experts, according to whom a market for standard elevators, in which most of the SME are only active on a small scale, can be distinguished from the market for special elevators, which is the SMEs' main line of business. The Big 4 benefit in the standard elevator market from economies of scale so that most of the SMEs are not a major competitive force in this market.

### **3.2. The Market for Sale and Installation of High-Rise Elevators**

Apart from standard and special elevators, the elevator business can further be subdivided in elevators of high-rise buildings. Elevators in high-rise buildings need to fulfil certain height, weight, and speed requirements so that high-rise elevators are not substitutable through any standard passenger elevator. Every high-rise building (a tall building higher than approximately 100 metres) requires a high-performance elevator with respect to speed (i.e., faster than four metres per second). High-rise elevators are produced using vastly different technologies than non high-rise elevators with respect to almost every component of the elevator, such as the engine or the gearing mechanism. Especially the main engine is much more powerful and larger than that of non high-rise elevators. It requires a dedicated own room for itself so that producers need correspondingly large production facilities. SMEs neither have the required technology nor the required machines to produce high-rise elevators. Indeed, high-rise products are, according to their respective websites, not offered by any of the SMEs, including the larger ones. Overall, only the Big 4 are active in the high-rise elevator market in Europe.

The geographical market scope for high-rise projects is EU-wide, as projects are not solely handled by the national branches in Europe but appear to have the support of the firms' global project organisation. While there is only a limited number of high-rise projects, these projects are typically much more expensive than standard elevators. Hence, revenues from high-rise-projects can be substantial.

While Asian companies are strong competitors in Asia and Middle East, the European market shares of Asian companies are negligible so far. Even when considering a time horizon of three to five years, which is relevant for a merger control assessment, large-scale market entry into the European market by Asian companies other than by acquisition of one of the Big 4 can be regarded as unlikely, as long as profitable market entry into the elevator business requires a local service network in every single country. The need to establish a persistent local presence can be regarded as a major entry barrier for Asian companies.<sup>12</sup> From this point of view, market entry by an Asian company becomes even more unlikely in case of an acquisition of Thyssenkrupp by Kone, as Thyssenkrupp would be the only real candidate for such an acquisition.

### **3.3. The Market for Sale and Installation of Escalators**

Based on case law and previous decisions by competition authorities, the market for escalators has usually been divided into two different submarkets based on requirements concerning performance, quality, design, operation, and price: Firstly, a market for escalators for public use, and secondly, a market for escalators for commercial use.<sup>13</sup> The demand for escalators is largely determined by the public transport sector (i.e., airports, train and subway stations), and by commercial users in department stores, administrations, and office buildings. These two types of demand differ significantly in their specific needs regarding for example operating hours, traffic density or lifting height. These differing needs require special configuration elements of an escalator, for which reason there are considerable differences in quality, construction design, features and functionality of escalators for public and commercial use and corresponding price differences. Considering these findings, the European Commission has concluded that escalators for public transport and escalators for commercial use are not directly substitutable for each other, and therefore belong to two separate relevant product markets.<sup>14</sup> As the Big 4 are active in both markets and both markets are effectively dominated by the Big 4, the market for new escalator installations can be analysed as one product market, given that the competitive conditions of the two markets do not differ much.

### **3.4. The Aftermarket for Service and Repair**

The servicing, maintenance and repair of elevators and escalators represents a classical aftermarket in the E&E industry (“service market” in the following) with close ties to the primary market for the sale and installation of elevators and escalators. The service market is characterised by different sets of players and market structures, with a huge variety of mostly regionally operating SME being active in the servicing sector.<sup>15</sup> This clearly distinguishes the service market from the sale and installations markets for elevators and escalators, as these markets are less concentrated than the markets for sale and installation. The focus in the following competitive assessment therefore lies on the sale and installations markets for elevators and escalators.

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<sup>12</sup> See Dispan (2015, p.20), supra note 5.

<sup>13</sup> See European Commission (1998), Commission Decision of 02. June 1998, IV/M.1080 – Thyssen/Krupp.

<sup>14</sup> See *ibid.*

<sup>15</sup> See Dispan (2015, p.17 et seqq.), supra note 5.

### 3.5. The Geographic Scope of the Markets for Sale and Installation of Elevators and Escalators

In the 1998 Thyssen/Krupp decision, the Commission defined EU-wide markets for the sale and installation of elevators, as from the viewpoint of the European Commission all major elevator suppliers were active throughout Europe at that time and the competitive conditions did not differ significantly from one Member State to another.<sup>16</sup> In the elevator and escalator cartel proceedings, however, the European Commission described the markets for the sale and installation of elevators and escalators as one with a national radius, even though production can be organised at an international/supranational level.<sup>17</sup> The Bundeskartellamt has defined the construction and installation markets on a national basis.<sup>18</sup>

As the Big 4 all have separate national sales organisations for each country and as national sales structures are reported to be crucial for a company's success, as customers usually source within national boundaries, national markets for the sale and installation of elevators seems the appropriate market delineation. Even more importantly, the activity of the bigger SME is limited at most to a few countries, but they do not cover the entire EU. While, for example, the Spanish firm Orona is a major competitive force in Spain and Portugal, they are largely absent from the German market or the Eastern European countries. Outside Germany, Schmitt + Sohn have some activities in Portugal but not in the entire EU. The participation of these SMEs in tenders beyond their "home turf" is limited and they are mainly active in their home country. As a result, the competitive conditions differ heavily between European countries. Therefore, the European Commission's finding in its 1998 Thyssen/Krupp decision that competitive conditions did not differ significantly from one Member State to another is no longer true more than 20 years later, as the so-called SMEs have very different market impacts between different EU countries. Hence, competition through SMEs takes place on a regional basis, but not (yet) EU-wide. Competitive conditions differ from country to country, which is also confirmed when analysing the (very different) market shares in different countries (see in detail chapter 4). The different competitive constraints in the various European countries call for a delineation of national markets.

## 4. Competitive Assessment

According to Art. 2(3) EC Merger Regulation, any merger that would result in a significant impediment of effective competition (SIEC) is to be prohibited, especially if the merger were to create or enhance a dominant position of the company. As the following analysis will show, the Big 4 reach combined market shares in some national markets for the installation of elevators from two thirds to up to 90%. Market shares for the installation of new escalators have even been higher in recent years and have reached from 80% up to 100% in some national EU markets. Thus, the E&E industry is already highly concentrated-. In the analysed markets, the (German) oligopoly presumption of section 18 clause 6 German Act against Restraints of Competition (GWB) is fulfilled. The acquisition of Thyssenkrupp by Kone would lead to a further significant

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<sup>16</sup> See *ibid.* (p.12).

<sup>17</sup> See European Commission (2007, para. 48 et seqq.), *supra* note 3.

<sup>18</sup> See Bundeskartellamt (2001), Tätigkeitsbericht 1999/2000 vom 22. Juni 2001, BT-Drs. 14/6300, p.117 et seqq.

increase in market concentration in many national product markets with correspondingly negative effects on competition, which would likely lead to price increases.

#### 4.1. The Market for Sale and Installation of Elevators

Public market share data of the E&E industry is only available to a very limited extent. Moreover, detailed market share data that distinguishes high-rise, standard and special elevators is not publicly available at all. Thus, the following market shares amount to a joint market for the sale and installation of all elevators. In a recent industry report, the Big 4's overall market share, encompassing all the different product markets, was estimated to be about 60% in 2014 in Germany, with Schindler's market share being above 20%, Kone's being 20%, Otis' being slightly below 15% and Thyssenkrupp's being slightly below 13%.<sup>19</sup> The market share of the three bigger SMEs was below 5% in the new installations market in 2014.<sup>20</sup> According to this information, a merger between Thyssenkrupp and Kone would lead to a combined market share of about 30% in Germany. National competition authorities and the European Commission usually analyse market shares to obtain a first indication of the competitive conditions in a market.

The sale and installation markets in some other European countries are even more concentrated compared to Germany. In France, for example, the Big 4's market share is 90%.<sup>21</sup> Also in Austria, the Big 4 exhibit an overall market share of 85-90%, with Schindler's market share accounting for 30-35%, Kone's market share for 30-35%, Thyssenkrupp's market share for 15-20% and Otis' market share accounting for 10-15%.<sup>22</sup> The proposed acquisition is further problematic from a competition law perspective especially in Sweden, Finland, and Benelux countries, where combined market shares will reach 33 to 65%.<sup>23</sup> Except for Sweden, there are no SMEs active nationwide in these countries, which can exert effective competitive pressure on the Big 4. At most can there be observed some regional activity of smaller SMEs in these countries. This may generally explain the higher combined market share of the Big 4 in these countries compared to Germany. In Spain and the UK, where the Big 4 at least compete with Orona and Pickering's Lift, the Big 4's overall market share is comparable to Germany with 50-60%.<sup>24</sup> Market shares in the above defined submarkets are supposed to be higher than the given market shares for the joint market for the sale and installation of all elevators, as will be shown below.

To assess the competitive effects of a merger or an acquisition, the calculation of the Herfindahl-Hirschman-Index ("HHI") can be helpful, which measures market concentration by adding the squared market shares over all suppliers in a market. The HHI addresses the question whether the market is characterised by many small companies (fragmentation = low market concentration) or a few large companies (high market concentration). An addition of market shares is more problematic when the degree of market concentration is high than when the degree of market concentration is low. Generally, the higher the HHI

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<sup>19</sup> See Dispan (2015, p.21), supra note 5.

<sup>20</sup> See *ibid.*, p.21 et seqq.

<sup>21</sup> See *ibid.*, p.22.

<sup>22</sup> See Higher Regional Court of Vienna (2014), supra note 9.

<sup>23</sup> See Fruits and Manne (2019), supra note 4.

<sup>24</sup> See Dispan (2015, p.22), supra note 5.

for a given market, the larger the share of production accounted for by a small number of companies. Ideally, all companies in a market should be included in the calculation. The absence of information on small firms, however, has only marginal effects, as these have only a minor impact on the index calculation. While the absolute height of the HHI gives a first indication about competitive pressure in the relevant market following a merger, the change in the index (the "delta") is a useful indication for the changes in concentration due to a merger or an acquisition.<sup>25</sup> In the following, the HHI and delta is calculated for Germany and Austria. The calculation is conservative in so far, as the lower limits of the above given market share ranges is taken for calculation.<sup>26</sup>

**Table 2: Pre- and Post-Merger HHI and Delta for Germany and Austria**

	Pre-merger HHI	Post-merger HHI	Delta
Germany	1,069	1,469	+400
Austria	2,125	3,025	+900

Source: Own calculation.

The Commission generally does not see competition problems in a market with a post-merger HHI of less than 1,000. Such markets usually do not require an in-depth investigation. The same is true for mergers with a post-merger HHI between 1,000 and 2,000 and a delta value below 250 or a post-merger HHI above 2,000 and a delta value below 150.<sup>27</sup>

The acquisition would lead to a considerable increase in market concentration, even in a broadly defined market for the sale and installation of all elevators in Germany, where the combined market share of Thyssenkrupp/Kone would be 30%, as implied by the high delta value of 400. In Austria, where the Big 4 do not face any effective competition from SMEs, concentration effects are more severe. The combined market share of Thyssenkrupp/Kone would be 50%. The post-merger HHI would reach 3,025 with a delta value of +900. These values are well above the thresholds at which the European Commission expresses competitive concerns and, thus, imply that the acquisition would give raise to significant competition concerns. The Austrian market is already highly concentrated, and the proposed acquisition would bring about a significant change in market structure, as implied by the high delta value of +900. For the above mentioned countries, i.e. Sweden, Finland, France and Benelux, in which the acquisition would also lead to a considerable increase in market concentration with combined market shares of 33 to 65%, HHIs are calculated in excess of 2,700 with delta values of 270 and higher.<sup>28</sup>

The market share is a strong indicator for market dominance. In Germany, single market dominance is presumed to exist, according to section 18 clause 4 GWB if an entity has a market share of at least 40%. Single market dominance means that a single undertaking has a market position enabling it to act unilaterally, i.e.,

<sup>25</sup> See European Commission (2004), Horizontal Merger Guidelines, para. 14.

<sup>26</sup> It is assumed that Schindler's market share is 20%, Thyssenkrupp's market share is 10%, Kone's market share is 20% and Otis' market share is 13%. In Austria Schindler's and Kone's market share is assumed to be 30%, Thyssenkrupp's market share is 15% and Oti's market share is 10%.

<sup>27</sup> See European Commission (2004, para. 19/20), supra note 25.

<sup>28</sup> See Fruits and Manne (2019), supra note 4.

without coordination with other market players, and to a large extent independently in the market without being significantly constrained by competitive pressures from competitors or customers.

The markets for the sale and installation of elevators can be characterised as so-called bidding markets where firms must bid or tender for contracts. Market shares in these markets can, in principle, be volatile and, therefore, one should generally be cautious when drawing conclusions from market shares for market power. Market shares in elevator markets are, however, much less volatile than they are in other bidding markets.<sup>29</sup> One explanation for that finding is that there is a substantial number of private and public procurements and the number of contracts per year is much higher compared to other bidding markets which are typically much “thinner”, i.e., where the number of tenders per year is lower. Therefore, in contrast to some other bidding markets, market shares are a meaningful indicator for the competitive conditions in the elevator industry, even though elevator markets are also bidding markets. Especially in countries without larger, nationwide SMEs where the Big 4’s market share is already high, the proposed acquisition is expected to have considerable concentration effects, similar to those in Austria. In France for example, the Big 4’s market share today is about 90%.<sup>30</sup>

As the analysis of relevant markets has shown, a narrower product market definition than „sale and installation of all elevators“ is more appropriate, given the limited role of SMEs in the mass market for standard elevators, at least differentiating between standard elevators („standard elevator market“) and special elevators plus so-called high-rise projects. Therefore, shares of the overall market for the sale and installation of *all* elevators do not properly reflect competitive conditions. In the standard elevator market for the installation of elevators, the Big 4 have higher market shares and are thus less exposed to competition than in a much more broadly defined market, because SMEs exert only marginal competitive pressure on the Big 4 in many countries. To obtain an idea of market shares in the standard elevator market, market shares from the market for all elevator installations were recalculated according to the assumption that about 80% of the Big 4’s turnover results from the standard elevator market and about 20% of the turnover from special elevators.<sup>31</sup> For the SMEs, this relation is just the reverse, i.e., about 80% of the turnover result from special elevators while about 20% of the turnover accrue from the standard elevator market. In Table 3 recalculated market shares are listed for Germany and Austria and Table 4 lists HHI and delta values, respectively.

**Table 3: Market Shares in the Standard Elevator Market in Germany and Austria**

	Schindler	Thyssenkrupp	Kone	Otis	Rest	Big 4	Thyssenkrupp/ Kone
<b>Germany</b>	28%	13%	28%	18%	13%	87%	41%
<b>Austria</b>	34%	17%	34%	11%	4%	96%	51%

Source: Own calculations based on market share data.

<sup>29</sup> See for example the Thyssen/Krupp decision of the European Commission where the market shares for Germany are given for the year 1998, which are not fundamentally different from market shares of 2003 (see European Commission (1998), supra note 13).

<sup>30</sup> See Dispan (2015, p.21), supra note 5.

<sup>31</sup> See Higher Regional Court of Vienna (2014), supra note 9.

**Table 4: Pre- and Post-Merger HHI and Delta for Germany and Austria in the Standard Elevator Market**

	Pre-merger HHI	Post-merger HHI	Delta
<b>Germany</b>	2,061	2,789	+728
<b>Austria</b>	2,722	3,878	+1156

Source: Own calculations.

As this recalculation of market shares and the corresponding HHI and delta values show, the proposed acquisition would have considerable concentration effects in the standard elevator market, as the Big 4 face less competition in this market segment than in a more broadly defined market for the installation of all elevators.<sup>32</sup> Combined market shares of Thyssenkrupp/Kone would exceed 40% in Germany and Austria in the standard elevator market. This is also likely true for many other European countries.

Thus, the acquisition would lead to a considerable increase in market shares of a combined entity Thyssenkrupp/Kone, even in the broadly defined markets for the sale and installation of all elevators, as shown for Germany and Austria. In the standard and the high-rise markets concentration effects would be even severe. Both in the standard as well as in the high-rise market, the acquisition would lead to a market structure where only three effective competitors would be left. Customers would be deprived off an important substitution possibility, as the Big 4 compete closely with each other in these segments. Hence, the acquisition would lead to a loss of a significant competition force and, therefore, to a significant impediment of effective competition (SIEC). With only three competitors left, customers will be deprived of a crucial option to switch so that an acquisition must be assessed more critically in terms of the probability of non-coordinated effects.

Countervailing effects, which generally could counter anticompetitive effects seem not to prevail. The probability of market entry in the new installations market is already low because of strong economies of scale and scope, especially in the Big 4 dominated standard and high-rise markets. Market entry by an SME on a large scale cannot reasonably be expected. Market entry on large scale by the big Asian players is also unlikely, as market entry would require establishing a sales and service network in every single member state.<sup>33</sup> Due to this entry barrier, market entry on an EU-wide level could best take place through the acquisition or cooperation with one of the Big 4. From this point of view, market entry by an Asian company becomes even more unlikely in case of an acquisition of Thyssenkrupp by Kone, as Thyssenkrupp would be the only real candidate for such an acquisition in the foreseeable future. Thus, market entry, which could deter the potential anticompetitive effects coming along with an acquisition by Kone is not to be expected in the timeframe relevant for the assessment of the concentration. Also, countervailing buyer power, which also could limit anticompetitive effects, cannot be assumed. Such buyer power may partly exist by key accounts, but for other market segments, where demand is more fragmented, buyer power cannot be assumed at all.

<sup>32</sup> A similar result is to be expected in the high-rise market, where the Big-4 face no competition from SME at all.

<sup>33</sup> See Dispan (2015, p.20), supra note 5.

Furthermore, the change from a market structure with four effective competitors to only three remaining major competitors is typically negative for innovation incentives, as large parts of the empirical literature have shown.<sup>34</sup> This point needs to be assessed especially critically in the underlying case, as Thyssenkrupp might currently be regarded as one of the most innovative firms in the elevator industry and can therefore be seen as a substantial contributor to the competitive process in the market in terms of innovation and, hence, of quality and choice. In this respect, Thyssenkrupp is not only competing in terms of actual products, but also in terms of possible forthcoming products.<sup>35</sup> Innovation in the E&E industry plays a critical role in particular with regard to the increasing digitalisation of the industry and high-rise buildings. To preserve innovation incentives is, therefore, of significant importance. Due to the technology transfer, which would come along with the acquisition, Kone's and/or TK's innovation incentives would considerably be reduced with negative effects on innovation competition and on the industry's innovation level as a whole.

#### 4.2. The Market for Sale and Installation of Escalators

The markets for the sale and installation of escalators are already more concentrated than the markets for the sale and installation of elevators. In most European countries, there are mainly the Big 4 that are active in these markets and SMEs play hardly a role in many European countries.<sup>36</sup> The Big 4's combined market share is often higher than 80% and even reaches 100% in some countries, for example in Germany.<sup>37</sup> Market shares in the escalator markets are more volatile than in the elevator segment, since tenders are usually for large market projects, for example airports or train stations. If a company wins a tender for a large project, this can have a significant impact on the market share of this company in a given year. Market shares therefore must be interpreted carefully.

Nevertheless, market shares give a first indication about the competitive conditions in escalator markets. Thyssenkrupp and Kone are two of the four competitors in the escalator segment. The parties' activities overlap considerably in the market for the installation of escalators, and in many countries there are hardly any other companies active apart from the Big 4. Hence, the market is already highly concentrated, even if market shares can vary between the Big 4 from year to year. Only three major competitors would remain in the market after an acquisition and, therefore, a significant reduction of the competitive pressure is to be expected, as customers generally have very limited alternatives to switch their demand with only few competitors left. As

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<sup>34</sup> See Cassiman, B., M.G. Colombo, P. Garrone, and R. Veugelers (2005), The Impact of M&A on the R&D Process: An Empirical Analysis of the Role of Technological- and Market-Relatedness, *Research Policy* 34(2), 195–220; Haucap, J. and J. Stiebale (2016), How Mergers Affect Innovation: Theory and Evidence from the Pharmaceutical Industry, DICE Discussion Paper, online available at: <https://ideas.repec.org/p/zbw/dicedp/218.html> (accessed on: 12/20/2019). A short summary of the paper can be found at: <https://hbr.org/2016/08/research-innovation-suffers-when-drug-companies-merge>, (accessed on: 12/20/2019); Veugelers, R. (2006), Literature Review on M&A and R&D, In *Mergers and Acquisitions – The Innovation Impact*, edited by B. Cassiman and M.G. Colombo. Edward Elgar, 37–62.

<sup>35</sup> In particular, TK is currently working on MULTI, a system based on magnetic levitation technology that moves multiple cabins not only vertically but also horizontally. It aims to increase the tube transport capacity by up to 50% with a continuous flow speed of 5 m/s, targeting the market of ultra high-rise buildings. In parallel, Kone is developing Ultrarope, a carbon-fibre rope that makes elevator ropes extremely light and enables cars to travel up to 1000 meters.

<sup>36</sup> This was already pronounced in the Thyssen/Krupp merger control decision by EU Commission (IV/M.1080) in 1998, where the EU Commission raised severe competition concerns resulting in remedies. In the last 20 years, the industry has rather experienced a further consolidation trend.

<sup>37</sup> See European Commission (2004, para. 51), *supra* note 25.

the Big 4 are without any competition in most national markets, the proposed acquisition is to be expected to lead to a systematic increase in market shares of the combined entity Thyssenkrupp/Kone, even though market shares are volatile. The resulting increase in market power on the part of Thyssenkrupp/Kone will most likely significantly impede effective competition (SIEC), in particular on grounds of unilateral effects.

## 5. Conclusion

The E&E industry is a highly concentrated market in Europe. The Big 4 combine about three quarters of all sales in Europe and they even reach a combined market share of 80 to 90% in some European countries. The discussed sale of Thyssenkrupp's elevator division to Kone would lead to a further significant increase in market concentration in many national markets for (1) the sale and installation of new elevators and (2) the sale and installation of new escalators and hence to a significant impediment of effective competition (SIEC) in these markets. This is true for a broadly defined market for the installation of all elevators, but even more for the standard and the high-rise markets. The markets for the sale and installation of escalators are today even more concentrated than the markets for the sale and installation of elevators. Therefore, it is to be expected that the acquisition would lead to even more severe effects on market structure in the escalator segment than in the elevator segment. In many national markets for the sale and installation of escalators the Big 4 face no competition from SME at all. As Thyssenkrupp is an important competitor in the escalator segment, a significant reduction of the competitive pressure is to be expected and hence a significant impediment of effective competition. Only three major competitors would remain in most markets. According to recent press reports Kone is willing to divest the complete European elevator business of Thyssenkrupp in order to eliminate competition concerns in Europe. Whether the EU Commission will accept such remedies as eliminating the competitive concerns, and in particular whether such a business would be regarded as a viable standalone player which can adequately compensate for the loss of competition, is an open question.