



中德金融经济中心  
Sino-German Center  
of Finance and Economics  
at Frankfurt School of Finance & Management



September 2019

## SGC Working Paper

# Targets and Impacts of Chinese Direct Investment in Germany – An Empirical Analysis

**Horst Löchel**, Sino-German Center at Frankfurt School of Finance & Management  
**Jan Sächting**, Commerzbank AG

### Abstract

*Mergers and acquisition of Chinese investors have been seen more and more critical in Europe and Germany in public as well as in policy. One reason is the so-called 'Made in China 2025' – strategy of China's government that aims to develop the country into a leading industrial nation over time. On top of that reciprocity does not exist for European investors in China. Against this background the present paper aims to contribute to the ongoing debate about the rationality of Chinese foreign direct investment based on scientific, e. g. empirical based research. The main focus is the question of whether Chinese investments show 'economic significance' in the sense that Chinese investment rationalities differ significantly from other foreign direct investment in Germany. In a second step, it is analysed how Chinese invested companies in Germany develop after the merger compared to the pre-merger development.*

Sino-German Center of  
Finance and Economics  
Association since 2015  
<https://sgc.frankfurt-school.de>

At Frankfurt School of  
Finance & Management  
Adickesallee 32-34  
60322 Frankfurt  
Germany

Follow us:

 Horst Löchel

## *Introduction*

After the global financial crisis in 2008, the global market for Mergers & Acquisitions (M&A) has recovered significantly in terms of the number of transactions as well as the volumes. This applies to Europe and Germany as well<sup>1</sup>. But also China entered the M&A market for prominent particularly by its 'Made in China 2025' (MIC 2025) strategy initiated by the Chinese government already in 2015. The plan identified ten key technologies in which China wants to become a world leader over time<sup>2</sup>.

While the number of takeovers by Chinese investors in Germany and Europe is at a high level, especially given the above-mentioned strategy, takeovers of companies in China by foreign investors are still an exception. This can be explained by stronger restrictions for foreign direct investments in China despite some progress in recent times<sup>3</sup>. Against this background, German policymakers are increasingly discussing higher restrictions that make M&A more difficult for non-European investors with a special focus on Chinese investors. Not only security policy concerns are cited as reasons. At the same time, statements can also be heard that Chinese investors are particularly interested in prospering, innovative companies<sup>4</sup>.

An example in case is the so-called 'Nationalen Industriestrategie 2030' of the Federal Minister of Economics and Energy<sup>5</sup>. Another example is a joint letter from the Economics Ministers of Germany, France and Italy to the EU Trade Commissioner Cecilia Malmström in which they complain about the increasing sale of key technology companies to investors from non-EU countries while EU companies are not granted comparable freedom of investment in the investing countries. They complain about the lack of reciprocity and fear that European know-how will be sold off<sup>6</sup>. From a legal point of view the various amendments of the 'Foreign Trade and Payments Ordinance' (Außenwirtschaftsordnung), most recently on 28<sup>th</sup> of December 2018, have risen the barriers of entry for M&A's of non-European in Germany<sup>7</sup>.

An interesting point in this context is the question whether Chinese investment targets differ compared to other foreign investors in Germany. Overall, this paper examines the economic significance of 183 Chinese invested companies between 2008 and 2017 with a regression analysis in comparison with a respective peer group of other foreign investors. On top of that, the paper takes a look on the post-merger development of Chinese invested companies with tools of descriptive statistics.

The paper starts with a wrap-up of existing studies on Chinese direct investments in Germany (and Europe). In this context, it will be distinguished between studies on transactional numbers and branches as well as on impact studies. Besides that, an overview of current contributions from economics and politics regarding the chances and risks of direct investments as well as the motivations of direct investments will be provided. Moreover, an overview of current contributions of economics and politics regarding the chances and risks of direct investments and the different motives of direct investments will be presented.

## *Literature Review: Chinese Direct Investments in Germany and Europe*

The trend study by Hanemann, Huotari, and Kratz, conducted in March 2019, surveyed developments of Chinese investments in the year of 2018 in Europe, before the changing of political regulations regarding direct investments<sup>8</sup>. The study indicated the volume of investments (17.3 billion Euros) of Chinese investors decreased compared to the previous year (29.1 billion Euros)<sup>9</sup>. Furthermore, the study locates a share of 45 % of China's total investment in three countries: Great Britain (4.2 billion Euros), Germany (2.1 billion Euros) and France (1.6 billion Euros)<sup>10</sup>. The authors explained the decrease of Chinese investments with the discussion on and partly realized implementation of tougher investments controls on both the level of individual states and the level of the European Union<sup>11</sup>.

Gerstenberger (KfW Bankengruppe) surveys the developments of Chinese investments since 2010, based on the data of the Zephyr-databank of Bureau van Dijk, which contains takeovers of up to 500 million Euros. All in all 302 enterprises are considered in the study<sup>12</sup>. As a result of this analysis, the share of Chinese investors in companies with a turnover of less than 500 million Euros increased in the period from 2005 to 2017. The highest figure was reached in 2016 with nearly 6.9 %<sup>13</sup>. Furthermore, the study showed that 14 % of the acquisitions, meant Chinese takeovers of insolvent companies. Compared to the remaining investors, which only constitute six percent of takeovers of insolvent companies, it is a huge difference<sup>14</sup>.

The study of Dr. Cora Jungbluth deals with the distribution of Chinese direct investments in Germany with regard to regions and branches. The aim is „[...] einen Abgleich zwischen diesen Firmenbeteiligungen und Chinas High-Tech-Strategie ‚Made in China 2025‘ vorzunehmen“<sup>15</sup>. The study examines 175 deals from China in the period from 2014 to 2017, with the condition that the purchased part of share capital is higher than ten percent. The study concludes that of those 175 company, 124 (71 %) were majoritarian (>50 %) sold to China and 112 (64 %) of the 175 companies belong to the branches of the “MIC2025”<sup>16</sup>. In this context, it is remarkable that 79 companies are distributed among only four branches: energy-saving cars (20.5 %), energy systems (18.8 %), biomedicine (16.1 %) and mechanical engineering (15.2 %)<sup>17</sup>. Regarding the regional distribution, the study noted that 77 transactions (44 %) took place in only two federal states: Baden-Wuerttemberg and North Rhine-Westphalia<sup>18</sup>.

Besides the consideration of descriptive statistics on Chinese investments, the question of the motivations of the investments also arises. The backgrounds and motivations of Chinese investments are discussed by the media as well as politics. The following part of this paper calls on three scientific contributions to examine this topic.

Chinese investments can be explained from a macro-economic point of view as follows: countries with a higher income per capita and more intensive commercial relationships with China receive more direct investments from China than other European countries. Regarding the distinction between Greenfield-investments and M&A, it can be noted that M&A is preferred in countries with comparably high labour costs, as the targets have already proven their competitive edge<sup>19</sup>. The study is based on a panel-poisson-regression of 297 Greenfield-investments and 231 M&A-transactions in countries of the European Union between 2003 and 2014.

Taube emphasized the catching up of growth and the integration into the global economy as the central motivations for China's acquisitions<sup>20</sup>. Taube argues that China is trying to minimize the economic gap with industrial states as quickly as possible and establish itself as an industrialized nation. Taube calls this process "nachholendes Wachstum"<sup>21</sup>. Through investments in technology companies from developed countries, technologies can be transferred to China. China thereby forgoes a trial-and-error process and is thus able to accelerate its growth<sup>22</sup>.

The study of Wang and Boateng analyses 27 transactions of transnational acquisitions by Chinese corporations between 2000 and 2004<sup>23</sup>. Based on the portfolio theory and the RBV, they note that Chinese acquisitions are motivated by diversification, transfer of technology and market access. These motives are to be regarded in the context of creating additional value for the shareholder or the proprietor<sup>24</sup>. Besides the mentioned studies on branches and transactional numbers as well as motivations behind Chinese acquisitions, further studies on these research topics have been published<sup>25</sup>.

To have a closer look at the repercussions of direct investments, the following chapter presents two further contributions.

Bollhorn aims at the development of a theoretical explanatory model for direct investments of emerging nations in industrial states and systemically gather the impact of ADI on direct as well as indirect stakeholders. He analysed Chinese and Indian investments in Germany to examine the impacts of the investments on the interest groups involved<sup>26</sup>. After 180 telephone interviews, he conducted 40 representative interviews as part of his study<sup>27</sup>. In conclusion managers as well as works councils of the interviewed companies observed positive repercussions regarding an improved competitive situation, a stabilization of turnovers and access to new markets<sup>28</sup>.

The representative study of Müller (2017) describes positive experiences. Based on a survey of 42 medium-sized companies with more than 150 employees, the consequences of Chinese investments regarding the topic of workers' representation are analysed via structured interviews<sup>29</sup>. According to this survey, the Chinese investors respect the participation of employee representatives in Germany, make long-term plans with their investments and are willing to invest in their acquisitions and with that strengthen their competitive position<sup>30</sup>.

Admittedly, Bollhorn's paper presents subjective impressions that have been compiled through the interviews. Nevertheless, they are an important clue for scientific development and form a contrast to different articles in the media and science<sup>31</sup>.

### *Comparative Economic Significances of Chinese FDI's in Germany*

The presented studies confirm the implementation of the strategy "MIC2025" by Chinese investors in Germany although Chinese investment transactions have decreased significantly since 2016 both in Europe and in Germany. Possible explanations of Chinese FDI are: further growth, transfer of technology, and leverage of the own industry standard.

So far, the negative repercussions cannot be proven based on the studies presented here.

Jungbluth's study on Chinese direct investments in Germany and the EU deals also with recommendations for action regarding the handling of further investments from China. It implies the following essential points, which are also found in the contribution of Gerhard:<sup>32</sup>

1. Openness towards direct investments before the background of the overall positive economic effects
2. Reduction of the threshold for investment control procedures regarding the takeover of company shares from currently 25 % to 10 %
3. Exertion of political influence on increasing reciprocity, in particular regarding the EU-China-Investment agreement, which has been discussed since 2014

Matthes' contribution also regards the afore-mentioned points as alternative actions, however, concerning the definition of the involved sectors, a strict limitation is requested. Additionally, he points out the advantages of open economic policy for Germany and he advocates a uniform European approach<sup>33</sup>.

Löchel (2018), Kunze and Windels (2018) and Zenglein and Holzmann (2018) also view a stronger political influence regarding the reciprocity and the openness towards Chinese investors as essential. However, they regard a restriction of Chinese investment opportunities in Germany critically<sup>34</sup>.

### *Hypotheses*

Based on the current state of research described in the previous chapter, this chapter formulates the hypotheses which are surveyed within the present working paper. In principle, economic theory assume a relationship between foreign direct investments and economic peculiarities. To test the assumption of economic peculiarities a comparison group is used within this paper.

Provided the industrial political concerns mentioned in the introduction are applicable, Chinese targets should show significances compare to a relevant peer-group. The theory of the market-based view leads to the assumption of investments in comparatively attractive branches. A characteristic of attractive branches is an according market growth of the branch and, with that, also of the associated companies<sup>35</sup>. To examine these circumstances, the following hypotheses are tested:

H1: The growth of a company has a positive influence on the probability the company is acquired by a Chinese investor.

Related to growth is the profitability of a certain industry and company respectively<sup>36</sup>. Hence, it can be postulated that the group of Chinese targets shows higher profitability than the respective peer-group:

H2: The profitability of a company have a positive influence on the probability the company is acquired by a Chinese investor.

From hypotheses H1 and H2 it follow that the business risks of Chinese invested companies should show significance as well given that growth and profitability is inverse correlated to risk:

H3: A lower business risk has a positive influence on the probability the company is acquired by a Chinese investor.

### *Empirical Approach*

The mentioned hypotheses will be examined by a regression analysis. The chapter presents the methodical foundations and preliminary considerations. Furthermore, this chapter contains a descriptive analysis for the description of the surveyed data and deals with the applicability of the data set for the regression analysis. Before the results of the study are presented, explications regarding the operationalization of the determinants are given.

As a statistical procedure, a generalized analysis method of the generalized linear models, the multilevel analysis with random slopes (“slopes-as-outcome”), was chosen, which can be regarded as an extension of the panel data analysis based on binary criteria.

The binary criteria “Chinese target” (1) or “other target” (0) serve as the dependent variable in this study; “other targets” form the comparison group. The relative annual changes of the criteria employee number, gross profit, EBITDA, equity ratio and total assets form the independent variable of this study.

Criteria’s company and sector integrated into the calculated model as second respectively third level variables. Each of the aforementioned parameters is measured five times.

Different multilevel models are calculated for the data set: One model with two levels, and one model with three levels each with and without winsorized data. The model with three levels and winsorized data showed the highest explanatory value. It displays the lowest value for AIC (308) and BIC (409), as the following overview (table 1) shows.

After the model with three levels and winsorized data has been selected, the regression requirements multicollinearity and sample size examined. Multicollinearity is tested via VIF. Values higher 5 to be examined more closely according to the literature<sup>37</sup> and hint towards multicollinearity. According to the following table, the maximum value for the VIF is 1.75. The requirement of non-existent multicollinearity can be confirmed.

Regressor	VIF-values
Gross profit	1,23
EBITDA	1,02
Total assets / liabilities	1,18
Employees	1,09
Equity	1,05
Financial statement (group / stand-alone)	1,42
Accounting standard	1,51
Deal type	1,36
Branch	1,75

Table 1: VIF-values

Regarding the present data set with N=721 values on level one, N=183 values on level two as well as N=12 values on level three, this requirement can be regarded as fulfilled. The stipulated values are clearly surpassed. Thus, the multilevel analysis can be applied.

### *Results for the Hypotheses*

The results of the individual determinants can be seen in the following (table 2). Model 4 with three levels and winsorized data offers the best explanatory value. For reasons of completeness, the results for all four calculated models are presented here. The interpretation of the results and their comparison with the theoretical foundations takes place in the following part.

	Model			
	1	2	3	4
Gross profit	0,043	0,070	-0,103	0,074
EBITDA	0,039	0,008	-0,021	0,007
Total assets / liabilities	0,010	0,180	-1,330	0,083
Employees	0,620	-2,880	-1,400	-4,130
Equity	-0,094	-0,320	-0,021	0,284
Financial statement (1)	1,560	-0,294	3,990	0,138
Accounting standard (1)	3,000	1,170	7.900**	0,493
Deal type (1)	17.400**	17.600**	16.900**	17.000***
Branch:				
Construction	3,270	6,370	1,150	0,913
Chemical	3,890	3,900	3,300	-0,076
Electronic	-12,300	-6,950	-10,800	-14.900***
Energy	-11.800**	-10.900*	-10.500*	-14.800*
Healthcare	-11.400*	-10.000*	-11.100**	-15.100***
Infrastructure	2,990	4,880	2,510	0,097
Industrial	-11.220***	-10.700***	-12.100***	-15.000***
Metal processing	-12.800***	-10.300**	-4,090	-14.900***
Food	-12,700	-11,300	-16,500	-16.300***
Textile	-11,700	-11,400	-15,100	-15,800
Manufacturing industry (wood)	-10,500	-0,062	2,510	1,860
Log Likelihood	-137,000	-138,000	-139,000	-132,000
Akaike Inf. Crit.	317,000	317,000	322,000	308,000
Bayesian Inf. Crit.	413,000	414,000	423,000	409,000

Sample	732
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 2: Results of the regression analysis

Comparing formulated hypotheses with the results of regression, none hypothesis can be confirmed.

Variables for growth do not show any significances. This applies for all three determinants: gross profit, total assets, and number of employees. The formulated hypothesis is therefore discarded. The market-based view based thesis cannot be empirically confirmed on the basis of the present data set.

The profitability of the surveyed companies was measured via “EBITDA”. Neither a positive nor a negative significance could be found in this study. On that basis, the second hypothesis is also discarded. The thesis of higher profitability through a higher amount of knowhow, based on the resource-based view, cannot be empirically confirmed also.

Last but the least also the equity ratio has no significant influence on probability buyer is an investor from China. The development of the equity ratio is not assigned a high significance in the context of this question. The hypothesis is discarded. The derivation of an increased equity ratio, which is based on a lead in the area of resources and results in lower business risk, cannot be empirically proven.

### *Results for Further Independent Variables*

Neither for the variables deal type or accounting standard significances can be measured.

Regarding the branches, a significant negative influence on the following industrial branches can be measured: electronics, energy, healthcare, mechanical engineering, metal processing, nutrition as well as textile.

Since the foreign comparison group was created on the basis of branches in which Chinese investors are active, a coincidental contribution cannot be assumed with regard to the branches. The measured significances are therefore to be relativized. In agreement with the study of Jungbluth, it can be stated that companies of the branches automotive, mechanical engineering, biomedicine (healthcare) and energy (infrastructure) are considerably more often the recipient of Chinese investments<sup>38</sup>.

The significance that can be proven in this study is the deal type (asset deal/ share deal). Results show a positive correlation between the probability of being the target of a Chinese investor and asset deals. A possible approach for this can be found in the report of the KfW-banking group. This report notes that Chinese investors buy insolvent companies with relative frequency – these transactions are in most cases processed as asset deals<sup>39</sup>.



## Post-Merger Development of Chinese Invested Companies

A descriptive comparison is now conducted. This comparison refers to the Chinese targets with available data from four years pre-acquisition till five years post-acquisition.

In this relation, of the overall 90 considered companies that were acquired by a Chinese investor only eleven companies fulfill the criteria. The conducted comparison refers to the economical determinants used in the regression. The descriptive comparison includes six single enterprises and five groups.

The comparison is about one asset deal and ten share deals, which are restricted to four branches (automotive, construction, metal processing, and mechanical engineering). With regard to the accounting standard, three acquisitions according to IFRS and eight acquisitions according to the German-GAAP are considered.

Average, median, standard deviation, maximum and minimum is used in the descriptive analysis - histograms are used for illustration. Before the measurements are examined divided by time periods (before acquisition/after acquisition), the entirety of measured values will be looked at first. The comparison is done via the average value. For the considered determinants, the same criteria apply in the calculation as in regression

### Growth

The first determinant for growth is the gross profit:

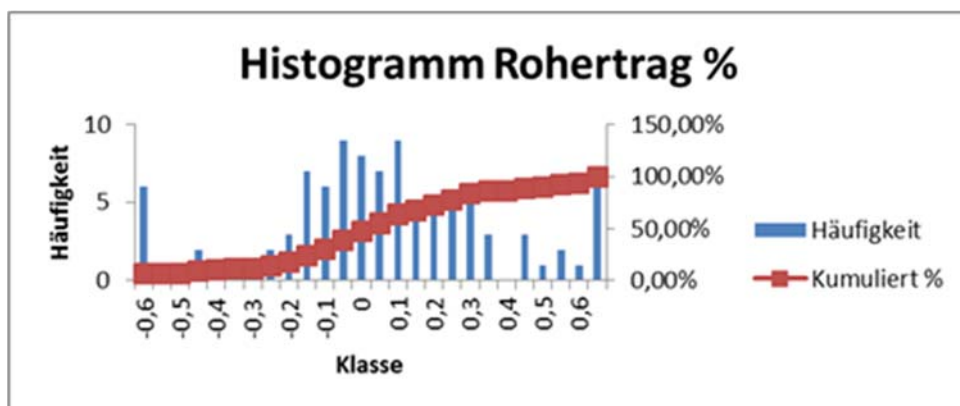


Figure 1: Histogram – gross profit in %

The histogram above shows the overview of all 99 measured values. It becomes apparent that the fluctuation margin is relatively high in view of the final values.

Table 7 shows the average development of gross profit at 16.87 % when looking at the entire period. The median with 2.88 % is below average, hints at a high fluctuation margin between the maximum (154.86 %) and minimum: (-7.04 %). This can also be confirmed when looking at the high standard deviation of 46.77 %; illustrated by the histogram above.

Gross profit %		Gross profit %		Gross profit %	
Mean	16,87%	Mean	33,26%	Mean	3,75%
Median	2,88%	Median	3,81%	Median	-3,44%
Standard deviation	46,77%	Standard deviation	107,51%	Standard deviation	21,79%
Min.	-7,04%	Min.	-26,94%	Min.	-18,41%
Max.	154,86%	Max.	353,14%	Max.	65,00%
Sample	11	Sample	11	Sample	11

Table 3: Average value gross profit (entire period/before/after acquisition)

For the second determinant of growth, number of employees, following histogram shows result:

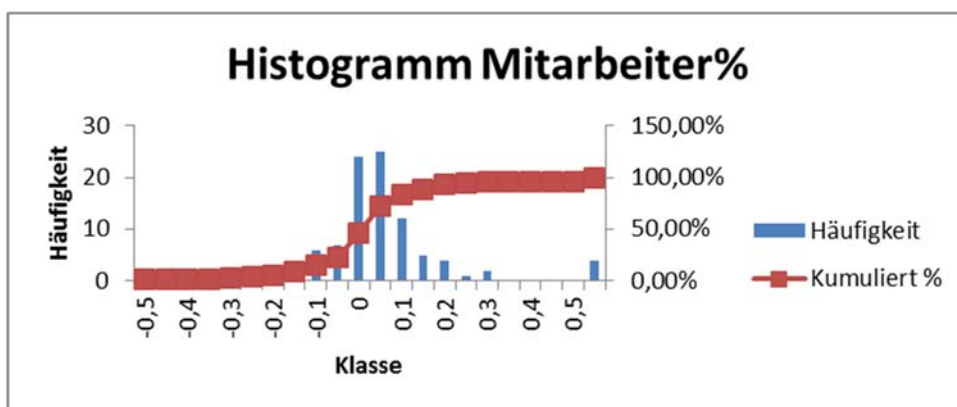


Figure 1: Histogram – Employees in %

The variable number of employees also seems to have outliers. In comparison with the determinant gross profit, however, the deviation is lower: the centring around the average value is higher. This statement is confirmed with view of the following table 8:

Employees %		Employees %		Employees %	
Mean	25,85%	Mean	57,02%	Mean	0,96%
Median	3,07%	Median	1,05%	Median	-0,13%
Standard deviation	83,98%	Standard deviation	192,86%	Standard deviation	6,41%
Min.	-10,77%	Min.	-21,53%	Min.	-9,04%
Max.	278,52%	Max.	637,97%	Max.	15,40%
Sample	11	Sample	11	Sample	11

Table 4: Average value employees (entire period/before/after acquisition)

On average, a more positive development could be observed pre-acquisition (57.02 %) than post (0.96 %). Median shows similar results. The following histogram shows third determinant total assets:

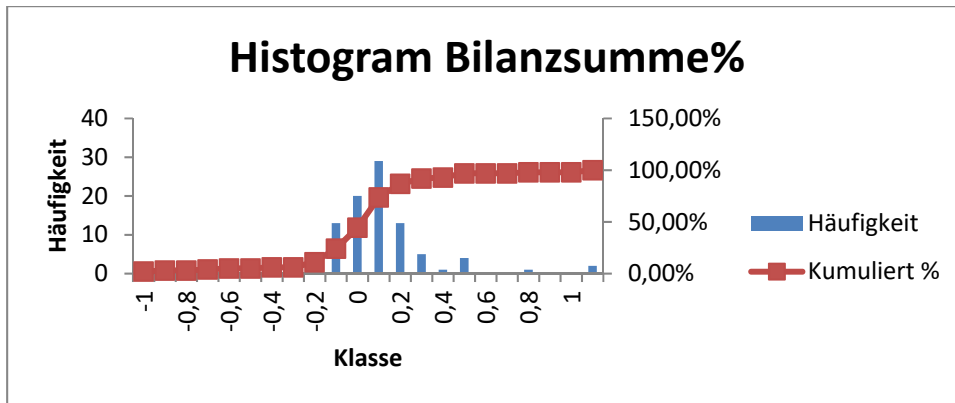


Figure Figure 2: Histogram – Total assets in %

The variable total assets show a differentiated development. Pre-acquisition development is negative in the median as well as on average, both show up positive post-acquisition. High values for maximum and minimum can be observed also. However, their manifestation is lower than in the previous parameters, as can be seen in the histogram.

Total assets / liabilities %		Total assets / liabilities %		Total assets / liabilities %	
Mean	336,92%	Mean	-26,66%	Mean	627,76%
Median	0,60%	Median	-0,07%	Median	2,71%
Standard deviation	1158,67%	Standard deviation	118,51%	Standard deviation	2071,56%
Min.	-170,36%	Min.	-377,27%	Min.	-4,84%
Max.	3826,70%	Max.	68,20%	Max.	6873,71%
Sample	11	Sample	11	Sample	11

Table 5: Average value total assets (entire period/before/after acquisition)

## Profitability

„EBITDA“ is used as criteria for the development of profitability. The histogram below shows a high fluctuation in the EBITDA margin. The majority of values is outside of the predefined threshold, which leads to a gap between median and average.

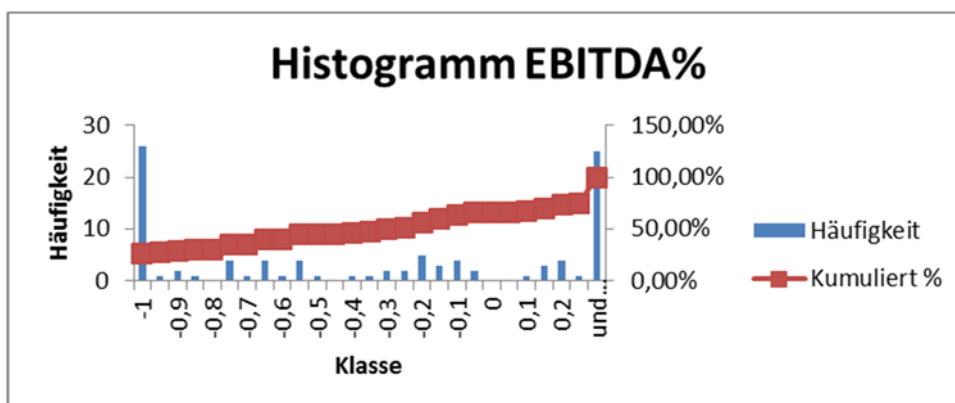


Figure 3: Histogram – EBITDA

The following table confirms the positive development of post-acquisition. Noticeable is that the values of the EBITDA show a considerably positive development after the transaction, despite high variation (the standard deviation is 3284 %). Pre-acquisition median and average

are negative for the EBITDA. The comparison with the entire period confirms the positive development after the acquisition.

EBITDA %		EBITDA %		EBITDA %	
Mean	559,71%	Mean	-52,47%	Mean	1049,45%
Median	11,46%	Median	-26,53%	Median	37,39%
Standard deviation	1831,63%	Standard deviation	156,11%	Standard deviation	3284,06%
Min.	-205,96%	Min.	-353,98%	Min.	-87,54%
Max.	6067,95%	Max.	182,46%	Max.	10943,54%
Sample	11	Sample	11	Sample	11

Table 6: Average value EBITDA (entire period/before/after acquisition)

### Business risk

Business risk, measured through equity ratio is negative pre-acquisition and positive post-acquisition. Width of the distribution is very high, particularly after the transaction (standard deviation: 993.10 %) as the following figure and table show.

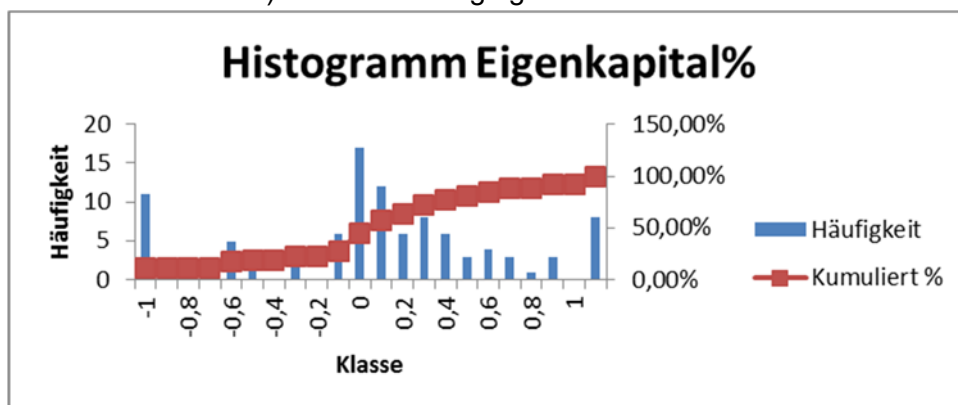


Figure 4: Histogram – Equity in %

Equity %		Equity %		Equity %	
Mean	170,79%	Mean	-12,51%	Mean	314,70%
Median	2,37%	Median	-3,04%	Median	3,52%
Standard deviation	531,30%	Standard deviation	61,82%	Standard deviation	993,10%
Min.	-66,02%	Min.	-154,62%	Min.	-83,00%
Max.	1764,63%	Max.	62,05%	Max.	3300,03%
Sample	11	Sample	11	Sample	11

Table 7: Average equity (entire period/before/after acquisition)

### Summary of Post-Merger Analysis

The following tables sum up average and median of the defined parameters:

Change in median	Gross profit	EBITDA	Total assets / liabilities	Equity	Employees
Pre-acquisition	3,81%	-26,53%	-0,07%	-3,04%	1,05%
Post-acquisition	-3,44%	37,39%	2,71%	3,52%	-0,13%
Pre- and post-acquisition	2,88%	11,46%	0,60%	2,37%	3,07%

Table 8: Summary changes in median

While the economic key figures show positive tendency over the entire period, medians of the determinants employees and gross profit developed positively. The total assets, the equity, and the EBITDA, in contrast, developed negatively. Post-acquisition, this trend is turned around. Gross profit and number of employees developed negatively, the total assets, the equity, and the EBITDA positively.

Examination of the median leads to the deduction that business risk (equity) and the profitability (EBITDA) have a tendency to improve, while growth (gross profit: negative development; employees: negative development; total assets: positive development) shows a negative development.

Change in mean	Gross profit	EBITDA	Total assets / liabilities	Equity	Employees
Pre-acquisition	33,26%	-52,47%	-26,65%	-12,51%	57,02%
Post-acquisition	3,75%	1049,45%	627,76%	314,70%	0,96%
Pre- and post-acquisition	16,87%	559,71%	336,92%	170,79%	25,85%

Table 9: Changes in average value

As already mentioned, the average value is influenced by strong deviations towards the minimum or the maximum. Therefore, the values are not normally distributed. The average value of all key figures is designated as positive for the period post-acquisition. Nevertheless, it must be noted that the algebraic signs, apart from two exceptions, are identical to that of the respective median. The exceptions are the determinants gross profit after acquisition and employees after acquisition. Overall, the average values indicate a positive development of the examined companies that can be interpreted in a way that at least a negative repercussions of Chinese direct investments in Germany have no evidence so far.

However, the time after the financial and economic crisis in 2008 was part of the surveyed period in all cases. These have to be taken into account in the examination of the present data and possibly provide an explanation for the intensive fluctuation of the values around the average. Furthermore, this effect needs to be considered in the evaluation of pre-acquisition years when all acquisitions happened – subsequent time without extreme global, erratic factors.

Regarding the positive development of the key figures equity and total assets in the period after the acquisition, it needs to be taken into consideration that a transaction was accompanied, in many cases, by a strengthening of the equity through the new proprietor. Given the aforementioned points and the low number of observed values, an empirical proof of the statement regarding the tendency is still pending.

## *Conclusion*

The paper wants to contribute to the ongoing discussion about the rationality of Chinese foreign direct investments in Germany in recent years based on scientific research. Starting point is the idea that M&A-transactions are grounded in certain expected economic benefits like, for instance, company growth and profitability as well as business risks.

The paper tries to answer the question whether Chinese targets show economic significances compare to other foreign investments in Germany with regards to these economic targets. Moreover, it also relevant in this context to know the economic development of Chinese targets after the acquisition.


The focus of this paper is an empirical survey. Overall, 183 companies acquired between 2009 and 2017 have been analysed; 90 Chinese invested and 93 from other foreign investors. After the evaluation of the regression requirements, the multilevel analysis with random slopes was chosen as a suitable statistical procedure.


In course of this, the hypotheses that Chinese investors show economic significance in terms of profitability, growth and business risks of the target companies compare to other foreign investors could not be proven. It could be shown that the variable "asset deal" has a significant on the probability that it is a Chinese investor. Since an asset deal is usually executed in the context of insolvency, it can be deduced that Chinese investors are particularly likely to buy companies out of insolvency.

A second important aspect of the current paper is the comparison of chosen Chinese targets pre- and post-acquisition. For evaluation, the same criteria are used as in the regression. The comparison is based on the average values and shows a positive tendency in the development of targets post-acquisition. This positive tendency corresponds to other studies presented on the repercussions of Chinese direct investments.

For economic policy, this paper could be interpreted as a hint that Chinese investors follow *mutatis mutandis* the same economic and business rationality like other foreign investors in Germany at least in the analysed period. Moreover, the overall business development of Chinese targets post-acquisition, especially the significantly large number of takeovers in insolvency, can be interpreted as a positive contribution of Chinese foreign direct investments for the economic development of Germany.

This working paper is an excerpt and slightly revised version from the Master thesis of Jan Sächtig in the Master of Mergers & Acquisitions (LLM) study programme of Frankfurt School of Finance & Management. Supervisors of the thesis have been Professor Löchel and Dr. Michael Drill.

Professor Horst Löchel, Prof. of Economics and Co-Chairman of the Sino-German Center at Frankfurt School of Finance & Management, [h.loechel@fs.de](mailto:h.loechel@fs.de);  Horst Löchel

Jan Sächtig, LL.M. Mergers & Acquisitions, Frankfurt School of Finance & Management, [Jan.Saechtig@commerzbank.com](mailto:Jan.Saechtig@commerzbank.com),  Jan Sächtig

## References

- Altmaier, P. (2019). *Nationale Industriestrategie 2030*. Berlin: Bundesministerium für Wirtschaft und Energie.
- Bollhorn, K. (2015). *Chinesische und indische Direktinvestitionen in Deutschland*. Dissertation, Philipps-Universität Marburg.
- Bundesministerium für Wirtschaft und Energie. (02 2017). *Bundesministerium für Wirtschaft und Energie*. [https://www.bmwi.de/Redaktion/DE/Downloads/S-T/schreiben-de-fr-it-an-malmstroem.pdf?\\_\\_blob=publicationFile&v=5](https://www.bmwi.de/Redaktion/DE/Downloads/S-T/schreiben-de-fr-it-an-malmstroem.pdf?__blob=publicationFile&v=5)
- CMS Hasche Sigle. (2018). *CMS European M&A Study 2018*. Frankfurt: CMS Hasche Sigle.
- Dreger, C., Schüler-Zhou, Y., & Schüller, M. (2017, 5. April). Chinesische Investoren verfolgen in Europa konventionelle Muster. *DIW-Wochenbericht*, 84, S. 263-269.
- Drill, D. M. (2018). *Verkauf deutscher Unternehmen an chinesische Konzerne - Herausforderungen im M&A Prozess*. Präsentiert auf dem Deutschen Corporate M&A Kongress in Frankfurt am Main am 14. November 2018.
- Gerhard, M. (2018). Mehr Schutz vor ausländischen Direktinvestitionen. *Wirtschaftsdienst* 2018, 98(11), S. 814-820.
- Gerstenberger, J. (2018). *Mehr chinesische M&A-Deals im deutschen Mittelstand – Anteil aber noch immer überschaubar*. Frankfurt am Main: KfW-Bankengruppe
- Hanemann, T., Huotari, M., & Kratz, A. (2019). *Chinese FDI in Europe: 2018 trends and impact of screening policies*. Berlin: Marcator Institute for China Studies.
- Jungbluth, C. (2018). *Kauft China systematisch Schlüsseltechnologien aus? GED Studie*. Gütersloh: Bertelsmann-Stiftung.
- KfW Bankengruppe. (2018). *M&A-Deals im deutschen Mittelstand –Verarbeitendes Gewerbe besonders gefragt*. Frankfurt am Main: KfW Research.
- Krugman, P. R. (1979). A Model of Innovation, Technology Transfer and the World Distribution of Income. *Journal of Political Economy*, 87(2), S. 253-266.
- Kunze, F., & Windels, T. (2018). Chinas Aufstieg als Herausforderung – historischer Perspektivenwechsel kann die Debatte bereichern. *Ifo Schnelldienst*, 71, S. 3-6.
- Löchel, H. (2018). Ein Gespenst geht um in Europ - das Gespenst "Made in China 2025". *ifo Schnelldienst*, 71, S. 9-11



- Madhok, A., & Keyhani, M. (2012). Acquisitions as entrepreneurship: asymmetries, opportunities, and the internationalization of multinationals from emerging economies. *Global Strategy Journal*, 2(1), S. 26–40.
- Matthes, J. (2017). *Unternehmensübernahmen durch chinesische Firmen in Deutschland und Europa*. Köln: Institut der deutschen Wirtschaft Köln.
- Müller, W. (2017). *Chinesische Investoren und Auswirkungen auf Arbeitsbeziehungen und Mitbestimmung*. Düsseldorf: Hans-Böckler-Stiftung.
- Rasche, C., & Wolfrum, B. (1994). Ressourcenorientierte Unternehmensführung. *Die Betriebswirtschaft*, 54, S. 501-517.
- Rusche, C. (2019). *Chinesische Beteiligungen und Übernahmen 2018 in Deutschland*. Köln: Institut der deutschen Wirtschaft.
- Samuelson, P. A. (2004). Where Ricardo and Mill Rebut and Confirm Arguments of Mainstream Economists Supporting Globalization. *Journal of Economic Perspectives*, 18(3), S. 135-146.
- Schneider, H. (2009). *Determinanten der Kapitalstruktur – Eine meta-analytische Studie der empirischen Literatur*. Wiesbaden: Gabler Verlag.
- Taube, M. (2008). *Ökonomische Entwicklungen in der VR China*. Duisburg: Institut für Ostasienwissenschaften.
- Wang, Q., & Boateng, A. (3 2007). Cross-Border M&A by Chinese Firms: An analysis of Strategic Motivation and Performance. *International Management Review*, 3(4), S. 19-29.
- Welfens, P. D. (2017). *Chinas Direktinvestitionen in Deutschland und Europa*. Düsseldorf: Hans-Böckler-Stiftung.
- Wirtz, B. W. (2003). *Mergers & Acquisitions Management*. Wiesbaden: GWV Fachverlage.
- Zenglein, M. J., & Holzmann, A. (2018). Made in China 2025: Gekommen, um zu bleiben – Ausländische Regierungen und Unternehmen müssen sich flexibel auf die Innovationsoffensive einstellen. *ifo Schnelldienst*, 71, S. 6-9

## Footnotes

- 
- <sup>1</sup> Cf. KfW Bankengruppe (2018) and CMS Hasche Sigle (2018)
  - <sup>2</sup> Cf. Jungbluth (2018) and Löchel (2018)
  - <sup>3</sup> Cf. Hanemann, T., Huotari, M. (2015), p.41
  - <sup>4</sup> Cf. Drill, M. (2018), S. 6
  - <sup>5</sup> Altmaier, P. (2019)
  - <sup>6</sup> Cf. Bundesministerium für Wirtschaft und Energie (2017), online
  - <sup>7</sup> Cf. Norton Rose Fulbright (2019), online
  - <sup>8</sup> Cf. Hanemann, T. et al. (2019), p. 9
  - <sup>9</sup> Cf. *ibid.*
  - <sup>10</sup> Cf. *ibid.*, p. 7
  - <sup>11</sup> Cf. *ibid.*, p. 9
  - <sup>12</sup> Cf. Gerstenberger, J. (2018), p. 5
  - <sup>13</sup> Cf. *ibid.*, p. 1
  - <sup>14</sup> Cf. Gerstenberger, J. (2018), p.4
  - <sup>15</sup> Cf. Jungbluth, C. (2018), p. 9
  - <sup>16</sup> Cf. *ibid.*, p. 17
  - <sup>17</sup> Cf. *ibid.*, p. 17
  - <sup>18</sup> Cf. *ibid.*, p. 19
  - <sup>19</sup> Cf. Dreger, C. et al. (2017), p. 268
  - <sup>20</sup> Cf. Taube, M. (2008), p. 7
  - <sup>21</sup> Cf. Taube, M. (2008), p. 7
  - <sup>22</sup> Cf. *ibid.*, p. 8
  - <sup>23</sup> Cf. Wang, Q.; Boateng, A. (2007), p. 19
  - <sup>24</sup> Cf. *ibid.*, p. 21
  - <sup>25</sup> See also: Rusche, C. (2017)
  - <sup>26</sup> Cf. Bollhorn, K. (2015), p. 16
  - <sup>27</sup> Cf. *ibid.*, p. 185
  - <sup>28</sup> Cf. Bollhorn, K. (2015), p. 192
  - <sup>29</sup> Cf. Müller, W. (2017), p. 5–6
  - <sup>30</sup> Cf. Müller, W. (2017), p. 23
  - <sup>31</sup> With view to: Madhok, A.; Keyhani, M. (2012); Kolstad, I.; Wigg, A. (2012); Naß, M. (2018)
  - <sup>32</sup> Cf. Jungbluth, C. (2018), p. 22; see also: Gerhard, M. (2018), p. 820
  - <sup>33</sup> Cf. Matthes, J. (2017), p. 22
  - <sup>34</sup> Cf. Löchel, H. (2018), p. 10; Kunze, F.; Windels, T. (2018), p. 3-6; Zenglein, M.J.; Holzmann, A. (2018), p. 6-9
  - <sup>35</sup> Cf. Wirtz, B. W. (2003), p. 36
  - <sup>36</sup> Cf. Rasche, C.; Wolfrum, B. (1994), p. 507
  - <sup>37</sup> Cf. Schneider, H. (2009), p. 225
  - <sup>38</sup> Cf. Jungbluth, C. (2018), p. 19
  - <sup>39</sup> Cf. Gerstenberger, J. (2018), p. 4